

Receiving Report

Date:

14/12/14
14129796

Batch No:

14129796

Supplier:

BLE

Dart P/O:

2967

Packing Slip: Yes ☒ No ☐
Invoice: Yes ☐ No ☐
Receipt: Cash ☐ Cr ☒
New Supplier Yes ☐ No ☒

Release Note Attached: Yes ☒ No ☐ N/A ☐
Waybill Attached: Yes ☐ No ☒
Shipment Complete: Yes ☒ No ☐ N/A ☐
QC18 Inspection ☐ N/A ☒
Work Order ☐ N/A ☒

Discrepancies

Part Number	Description	Quantity Ordered	Quantity Rec'd	Quantity Short	Quantity Inspected	Quantity Rejected	Comment / NCR Number

Initials of Receiver

QC12

Production/Admin:

Date _____
Received/Costing _____
Initial _____

Location _____



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO24957**

Purchase Order Date 7/10/2014

PO Print Date 7/10/2014

Page Number 1 of 3

Order From :

VU-BEA001

Ship To : DART AEROSPACE LTD

B/E AEROSPACE INC
88289 EXPEDITE WAY
CHICAGO, IL 33172
USA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

PAID

Contact Name

Vendor Phone

305-925-2600

Ship To Contact

Ship To Phone

Ship Via:

FedEx PI ppd

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

USD

FOB

FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	MS17984-C413	Quick Release Pin	7/14/2014 Yes 7/14/2014	FN	20.00 Each	\$18.00	\$360.00
Line Total:							\$360.00
2	MS20600-AD4W3	Cherry Rivets	7/14/2014 Yes 7/14/2014		600.00 Each	\$0.12	\$72.00
Line Total:							\$72.00
3	MS21043-5	Nut	7/14/2014 Yes 7/14/2014		100.00 Each	\$1.05	\$105.00

Note:

7/10/2014



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO24957**

Purchase Order Date 7/10/2014

PO Print Date 7/10/2014

Page Number 2 of 3

Order From :

B/E AEROSPACE INC
88289 EXPEDITE WAY
CHICAGO, IL 33172
USA

VU-BEA001

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone

305-925-2600

Ship To Contact

Ship To Phone

Ship Via:

FedEx PI ppd

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

USD

FOB

FCA - (Free Carrier)

Line Total: \$105.00

4 MS21250-06022

BOLT

7/14/2014

24.00

\$4.70

\$112.80

Yes

Each

7/14/2014

Line Total: \$112.80

5 MS21250-05-006

BOLT

7/14/2014

60.00

\$3.50

\$210.00

Yes

Each

7/14/2014

Line Total: \$210.00

6 MS35206-229

Screw

7/14/2014

100.00

\$0.15

\$15.00

Yes

Each

7/14/2014

Line Total: \$15.00

Note:

7/10/2014



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO24957**

Purchase Order Date 7/10/2014

PO Print Date 7/10/2014

Page Number 3 of 3

Order From :

B/E AEROSPACE INC
88289 EXPEDITE WAY
CHICAGO, IL 33172
USA

VU-BEA001

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone

305-925-2600

Ship To Contact

Ship To Phone

Ship Via:

FedEx PI ppd

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

USD

FOB

FCA - (Free Carrier)

7 MS17984-C415

PIN, QUICK RELEASE

7/14/2014 FN

10.00

\$32.50

\$325.00

Yes

Each

7/14/2014

Line Total:

\$325.00

8 71401-45

PROCUREMENT
QUALITY CLAUSES

7/14/2014

1.00

\$0.00

\$0.00

No

7/14/2014

Procurement Quality Clauses

A005 RIGHT OF ENTRY

A012 CHEMICAL AND PHYSICAL TEST REPORTS

A016 PERSONNEL QUALIFICATION

A026 CERTIFICATION OF MATERIAL CONFORMANCE

A032 PUBLIC LAW 101-592 FASTENER QUALITY ACT

A033 STATEMENT OF CONFORMITY/TEST RECORDS

FOR NAS, AN and MS FASTENERS

A040 NOTIFICATION OF QUALITY ESCAPE

A041 QUALITY MANAGEMENT SYSTEM

A042 DART NOTIFICATION BY SUPPLIER

A043 RETENTION OF QUALITY DOCUMENTS

Line Total:

\$0.00

PO Total:

\$1,199.80

Note: Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Change Nbr:

1

Change Date:

7/10/2014



B/E Aerospace, Inc.

CONSUMABLES MANAGEMENT

www.beconsumables.com

Remit to Address: 88289 Expedite Way, Chicago, IL 60695-0001

Wire Instructions: B/E Aerospace Consumables Management • JPMorgan Chase Bank New York

ABA: 021000021 • Account: 304639273 • SWIFT: CHASUS33 • CHIP UID: 0002

Sales Quote 02WJEX

TO: 002409
ATTN: CHANTAL LAVOIE
DART AEROSPACE LTD
1270 ABERDEEN ST
HAWKESBURY, ON
CANADA K6A 1K7

FROM: LUCIE PILON
B/E AEROSPACE CONSUMABLES MANAGEMENT
P.O. BOX 025263
MIAMI, FL 33102-5263
TEL: +1.514.337.2122
FAX: +1.514-337-3989
EMAIL: Lucie_Pilon@beaerospace.com

QUOTE DATE: 07/10/14
EXPIRES : 08/09/14
CURRENCY : USD

REF# : RFQ
PHONE: 613-632-9577
FAX : 613-632-1053

ITM	QTY	PART NUMBER	PRICE	UM	EXT PRICE	DELIVERY	INFO
001	20	HL32PB5-8	NO BID	EA			
COMMENT: NO BID							

002	20	MS17984C413	18.0000	EA	\$	360.00	STOCK
COMMENT: STOCK IN MIAMI (MFG. COFC AND CHEM/PHYS)							
MANUFACTURER: 0095 AVIBANK MFG.							

003	10	MS20001-4-7200	50.0000	EA	\$	500.00	STOCK
COMMENT: STOCK IN MIAMI (MFG. COFC AND CHEM/PHYS) * 6 FEET LENGHT/EACH							
MANUFACTURER: 2528 GKN AEROSPACE							

004	600	MS20600AD4W3	0.1200	EA	\$	72.00	STOCK
COMMENT: STOCK IN MIAMI (MFG. COFC AND CHEM/PHYS)							
MANUFACTURER: 0155 CHERRY AEROSPACE SANTA ANA							

005	100	MS21043-5	1.0500	EA	\$	105.00	STOCK
COMMENT: STOCK IN MIAMI (MFG. COFC AND CHEM/PHYS)							
MANUFACTURER: 0425 ALCOA FASTENING/REPUBLIC							

006	24	MS21250-06022	4.7000	EA	\$	112.80	STOCK
COMMENT: STOCK IN MIAMI (MFG. COFC AND CHEM/PHYS)							
MANUFACTURER: 0005 3V FASTENERS							

007	60	MS21250-05006	3.5000	EA	\$	210.00	STOCK
COMMENT: STOCK IN MIAMI (MFG. COFC AND CHEM/PHYS)							
MANUFACTURER: 0005 3V FASTENERS							

008	100	MS35206-229	0.1500	EA	\$	15.00	STOCK
COMMENT: STOCK IN MIAMI (MFG. COFC AND CHEM/PHYS)							
MANUFACTURER: 0324 NORTH EAST FASTENERS CORP							

COMMENTS: Merci,
Lucie

A \$100.00 ORDER MINIMUM IS REQUIRED FOR ALL CREDIT CARD ORDERS

ALL ORDERS SUBJECT TO 100% RESTOCKING CHARGE



B/E Aerospace, Inc.

CONSUMABLES MANAGEMENT

www.beconsumables.com

Remit to Address: 88289 Expedite Way, Chicago, IL 60695-0001

Wire Instructions: B/E Aerospace Consumables Management • JPMorgan Chase Bank New York
ABA: 021000021 • Account: 304639273 • SWIFT: CHASUS33 • CHIP UID: 0002

Sales Quote 02WJEX (Continued)

QUOTES VALID FOR 30 DAYS

ALL STOCK SUBJECT TO PRIOR SALE

***THIS QUOTE IS SUBJECT TO B/E AEROSPACE'S TERMS AND
CONDITIONS OF SALE WHICH MAY BE VIEWED AT:
www.beconsumables.com/cm/docs/BE_CM_Conditions_of_Sale.pdf ***



B/E Aerospace, Inc.

CONSUMABLES MANAGEMENT

www.beconsumables.com

Remit to Address: 88289 Expedite Way, Chicago, IL 60695-0001

Wire Instructions: B/E Aerospace Consumables Management • JPMorgan Chase Bank New York
ABA: 021000021 • Account: 304639273 • SWIFT: CHASUS33 • CHIP UID: 0002

Sales Quote 02WNN4

TO: 002409
ATTN: CHANTAL LAVOIE
DART AEROSPACE LTD
1270 ABERDEEN ST
HAWKESBURY, ON
CANADA K6A 1K7

FROM: LUCIE PILON
B/E AEROSPACE CONSUMABLES MANAGEMENT
P.O. BOX 025263
MIAMI, FL 33102-5263
TEL: +1.514.337.2122
FAX: +1.514-337-3989
EMAIL: Lucie_Pilon@beaerospace.com

QUOTE DATE: 07/10/14
EXPIRES : 08/09/14
CURRENCY : USD

REF# : RFQ
PHONE: 613-632-9577
FAX : 613-632-1053

ITM	QTY	PART NUMBER	PRICE	UM	EXT PRICE	DELIVERY	INFO
001	10	MS17984C415	32.5000	EA	\$ 325.00	STOCK	
COMMENT: STOCK IN MIAMI (MFG. COFC AND CHEM/PHYS)							
MANUFACTURER: 0407 QRP INC.							

COMMENTS: Thank you,
Lucie

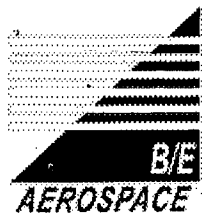
A \$100.00 ORDER MINIMUM IS REQUIRED FOR ALL CREDIT CARD ORDERS

ALL ORDERS SUBJECT TO 100% RESTOCKING CHARGE

QUOTES VALID FOR 30 DAYS

ALL STOCK SUBJECT TO PRIOR SALE

***THIS QUOTE IS SUBJECT TO B/E AEROSPACE'S TERMS AND
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www.beconsumables.com/cm/docs/BE_CM_Conditions_of_Sale.pdf ***



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO24957

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
6	100	EA	MS35206-229		49745	NORTH EAST FASTENERS	07ZNS		


Jason Lewis
Vice President of Quality

07/11/14

ISO9001:2008 & AS9100



QSLM Level 2/3
Cage code: 07ZN5



NORTH EAST FASTENERS
CORPORATION

Telephone:
(860) 589-3242

Fax:
(860) 589-6969

Web-Site: www.NEF1.com
E-mail: nef@NEF1.com

CERTIFICATE OF CONFORMANCE

This certifies that these fasteners are in conformance to the specifications required for this order and that these fasteners sold by North East Fasteners Corporation were manufactured at 8 Tremco Dr., Terryville, CT 06786 U.S.A.

Customer Order Information			
Name : B/E Aerospace Consumables Management			
Ship Date: 09/27/2013		NEF Part #: 6320.4375PPMSSTCAYC3	
P.O. #: 0PJR55		Heat #: P-SF24446	
Qty Shipped: 479.200 m		Lot #: 49745	
Descr: 6-32 x 7/16" Phillips Pan MS (2A) Steel 1022 Cadmium Plate Yellow Chromate Type 2 Class 3 AMS-QQ-P-416C			
Specifications			
IFI		ISO	
Customer Print	X	DIN	
Metric IFI		JIS	
Other Specifications			
Print # : NASM35206-229 REV 2			
Part # : MS35206-229 REV 2			
Desc :			
Dual :			
This certifies that these fasteners are in conformance with the EU RoHS & WEE Directives.			

Mark Sovia



* This product has been mfg. in an environment free from contamination by Mercury or any of its compounds.

AS9100/ISO 9001-2008 QSLM Level 2/3 CAGE Code: 07ZN5 website: www.nef1.com



QSLM Level 2/3
Cage code: 07ZN5

NEF

**NORTH EAST FASTENERS
CORPORATION**

Telephone:
(860)-589-3242
Fax:
(860)-589-6969
Website: www.nefl.com
e-mail: nef@nefl.com

PO Number: 0PJR55
Lot Number: 49745
Heat Number: P-SF24446
Specs: NASM35206

Date: 09/19/2013
Lot Size: 550.00

Description: 6-32 x 7/16" Phillips Pan MS (2A) Steel 1022 Cadmium Plate Yellow Chromate Type 2 Class 3
AMS-QQ-P-416C

Axial Tensile Results

Requirements : 545 Lbs Min

Sample	Ultimate Tensile Strength (Lbs)
1	655
2	666
3	656
4	659
5	650
6	656
7	658
8	650

Joe Longo

Quality Control Manager



All tests listed on this certification have been performed in accordance with the required specifications named above. Calibrations are in accordance with ISO10012-1. The analysis reported on this certification is in accordance with North East Fasteners Quality Manual guidelines and methods.



**Johnstown
Wire
Technologies**

124 Laurel Ave,
Johnstown, PA 15906

Phone: 814-532-5680
Fax: 814-532-5684

WORK ORDER
733100

TEST REPORT

LOT NUMBER
P-SF24446

SALES ORDER / RLS
157236 / 4

SOLD TO

Tru-Spec Metals, Inc.
21 Commerce Drive
North Branford, CT 06471
USA
Attn: QA Dept

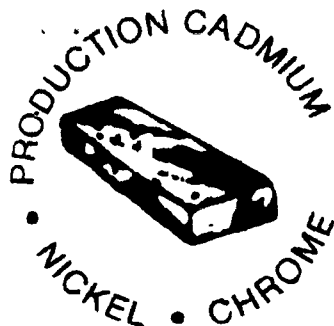


CUSTOMER P.O. P14454	CUSTOMER PART C10221145IPPL	QUANTITY 4,068 LBS	COILS LADING NO 3 00118198	SHIPMENT DATE 06/25/2013
SPECIFICATION Truspec-5231 Federal Std 66 1022 Aluminum Killed Fine Grain Cold Heading Quality Spherodize Annealed In Process PHOS & Lube Coated Size: .1145 +.0005 -.0005				
CERTIFICATION REQUIREMENTS				
Chemical				
C .205	Mn .868	P .013	S .002	Si .061
Al .046				
Mechanical				
TEST Tensile Str	UNITS Lbs/SqIn	HIGH 67000	LOW 67000	AVERAGE 67000
Rod / Melt Source				
Country of Origin So. Korea				
End of Certification				

received
07-13-13

I certify that the results are a true and correct copy of the records prepared and maintained by JOHNSTOWN WIRE TECHNOLOGIES in compliance with the requirements of the cited specification. Chemistry is as reported by the rod / bar supplier and is not in JWT A2LA accreditation. This test report cannot be reproduced or distributed except in full without the written permission of JOHNSTOWN WIRE TECHNOLOGIES. The test results certified herein relate only to the items tested.

Daniel J. Malik
Daniel J. Malik Director of Quality Assurance



New Method Plating Co., Inc.

QUALITY
MANAGEMENT
SYSTEM
ISO 9001:2000
AS9100 REV. B
CERTIFIED

Established 1931



43 Hammond St
Worcester, MA 01610
Phone 508.754.2671
Fax 508.754.1981
www.newmethodplating.com

CERTIFICATE OF COMPLIANCE

COMPANY North East Fasteners Corp.

DATE 9/23/13

PO#

LOT#

QUANTITY

18496

49745

550,000

JOB # 6-32 x 7/16 phillips pan MS35206-229-2

CADMIUM PLATED IN ACCORDANCE WITH AMS QQ-P-416C

Class III Type II (Clear Yellow X)

Hardness: NA HRC

☒ NO BAKE

☐ Before plating, bake at 375+/-25F for 4 hours. After plating, bake at 375+/-25F for 8 hours.

☐ Before plating, bake at 275+/-25F for 5 hours. After plating, bake at 275+/-25F for 23 hours.

☐ Before plating, bake at 375+/-25F for 4 hours. After plating, bake at 375+/-25F for 23 hours.

Thickness Test Results

Accept ☒ Reject ☐ Min.: Spec. .0002 Read .00024 Avg. .00028

Adhesion Test Results

Accept ☒ Reject ☐

Inspected by:

Certification

This lot has been processed, sampled, tested, and inspected in accordance with the contract and specification requirements listed above, and the plating and conversion coating complies with those contract and specification requirements. Process control data is on file and is available upon request. We certify that these parts have been processed in a mercury free environment.

Signed:

Christopher J. Capalbo

Title: Quality Manager

Date:

SEP 23 2013



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

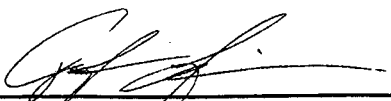
Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO24957

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
2	600	EA	MS20600ADW3		87574434	CHERRY AEROSPACE-SAN	11815		


Jason Lewis
Vice President of Quality

07/11/14



CHERRY®
AEROSPACE
SPS Fastener Division, a PCC Company

Cherry Aerospace
1224 East Warner Avenue
Post Office Box 2157
Santa Ana, CA 92707-0157
USA



PACKING LIST

Order No: S0338536
Order Date: 10/21/08
Print Date: 01/31/12

Page: 1



Sold-To: 10017870

Ship-To: 10043190

S O L D T O	B/E AEROSPACE
	CONSUMABLES MANAGEMENT
	PO BOX 025263
	MIAMI, FL 33102-5263
	USA

S H I P T O	B/E AEROSPACE
	9835 NW 14TH STREET
	MIAMI, FL 33172

Salesperson (s):106

Purchase Order: 1003068


Credit Terms: Net 30
Net 30

Ship Via: YRC

FOB: Origin - Collect

Remarks:

FASTENERS ECCN: 9A991d, SCHEDULE B# 8803300010
SHIP: 1-99 LBS UPS GROUND, ACCT 870-717
OVER 100 LBS USF BESTWAY, AIR CARGO TRANSIT

Ln	Item Number	Site T Location	Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped
2	CR9163-4-03	1600			EA	01/15/12
	Customer Item: MS20600AD4W3					
		B0803	87574434	24200.0		()

TEST REPORTS ENCLOSED
DO NOT DESTROY

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

Packing List



CHERRY®
AEROSPACE

SPS Fastener Division, a PCC Company

Cherry Aerospace
1224 East Warner Avenue
Post Office Box 2157
Santa Ana, CA 92707-0157
USA



PACKING LIST

Order No: SO338536
Order Date: 10/21/08
Print Date: 01/31/12

Page: 1



Sold-To: 10017870

Ship-To: 10043190

S O L D T O	B/E AEROSPACE
	CONSUMABLES MANAGEMENT
	PO BOX 025263
	MIAMI, FL 33102-5263
	USA

S H I P T O	B/E AEROSPACE
	9835 NW 14TH STREET
	MIAMI, FL 33172

Salesperson (s):106

Purchase Order: 1003068

Credit Terms: Net 30
Net 30

Ship Via: YRC

FOB: Origin - Collect

Remarks:

FASTENERS ECCN: 9A991d, SCHEDULE B# 8803300010
SHIP: 1-99 LBS UPS GROUND, ACCT 870-717
OVER 100 LBS USF BESTWAY, AIR CARGO TRANSIT

Ln	Item Number	Site T Location	Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped
2	CR9163-4-03	1600			EA	01/15/12
	Customer Item: MS20600AD4W3					
		B0803	87574434	24200.0		()

TEST REPORTS ENCLOSED
DO NOT DESTROY

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

CERTIFICATION

ATTENTION: PURCHASING DEPARTMENT

Quality Assurance Representative

The material and/or parts we are furnishing in this shipment (as shown above) on the subject Purchase Order conform to the order and applicable specifications, Evidence that the material and/or parts meet the specifications and results of all tests for each lot affected will be in our files and will be available for your inspection at any reasonable time.

Signed

SIM NGUYEN

**CHERRY[®] AEROSPACE**

SPS Fastener Division, a PCC Company



Accredited

Nadcap[™]

Chemical Processing

Heat Treating

ISO/IEC 17025

Material Testing Lab

1224 East Warner Avenue
Santa Ana, CA 92707-0157**Final Inspection & Test Report**
Cherry[®] Rivet**An ISO9001 and AS9100 registered company. OASIS #6111041606**

Part Numbers	Rev	Proc. Spec.	Rev	Lot I.D. No.: 87574434 Lot Size: 25,000 MFG. Date: January 27, 2012
CR9163-4-03	J	MIL-R-7885	D2	

ASSEMBLY DATA

TYPE	ID #	CERT #	MATERIAL	FINISH	LUBE
Rivet	87574434	A68336	2117-T4 ALUM. ALLOY	MIL-C-5541	Par-90
Stem	87549197	A68111	2017-T4 ALUM. ALLOY	MIL-C-5541	Par-90

W.O. #: 5456275

Final Lube: None

QUALITY CONFORMANCE/ACCEPTANCE RESULTS

MIN REQ'D SAMPLE SIZE SPECS	INSTALLED SHEAR		SPINDLE RETENSION	
	370		15	
	9		9	
			UnLocked	
RESULTS	503	499	46	36
	516		47	
	509		47	
	508		50	
	513		42	
	508		44	
	510		46	
LOAD VALUES IN POUNDS	520		52	

<u>PCS.</u>	<u>ITEM</u>	<u>STATUS</u>	<u>PCS.</u>	<u>ITEM</u>	<u>STATUS</u>
<u>20</u>	EXAMINATION	<u>PASS</u>	<u>13</u>	INSTALLATION (Min and Max Grips)	<u>PASS</u>

Comments:

Blind Fastener

Tr. Rev.: -

Rev. Date: 1/27/2012

Inspector

V Irlarte

Insp. Control #:

The parts contained in this shipment have been manufactured and inspected in accordance with TSO-C148. The conditions and tests required for TSO approval of this article are minimum performance standards. Aircraft fasteners approved under this TSO are not necessarily interchangeable with other aircraft fasteners approved under this TSO. Fasteners of similar dimensional properties may have widely varying performance and metallurgical properties. Substitution of parts may only be done if acceptable to or approved by the Administrator.

This test report shall not be reproduced except in full, without the written approval of the laboratory.
The recording of false, fictitious, or fraudulent statement or entries on the certificate may be punished as a felony under Federal law.

KAISER ALUMINUM

SANTA ANA, CA. 92707-0157

CHEM COMP	ALLOY	SILICON		IRON		COPPER		MANGANESE		MAGNESIUM		CHROMIUM		OTHERS	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
	2117		0.80		0.70	2.20	3.00		0.20	0.20	0.50		0.10	0.05	0.15
		NICKEL		ZINC		TITANIUM		LEAD		BISMUTH					
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
					0.25										
		ALUMINUM REMAINDER													

KAISER
ALUMINUM
FABRICATED PRODUCTS

Kaiser Aluminum & Chemical
600 Kaiser Drive
Heath, OH 43056-1088
740-522-1151

Best in Class

CERTIFIED TEST REPORT
<http://Certs.KaiserAluminum.com>


Specifications

QQA-430

Miscellaneous Notes

Made in USA

Mercury is not a normal contaminant in aluminum alloys. Neither mercury nor any of its compounds were utilized by Kaiser Aluminum in the manufacture of this material. Actual (Act) chemical composition is from representative samples taken during the ingot casting process. Independent chemical analysis will vary from these values because of natural variation in the process and testing error. This test report shall not be reproduced, except in full, without the written approval of Kaiser Aluminum. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law. Chemical analysis performed in accordance with ASTM E 1251-07. The Newark facility is AS9100B:2004 approved. The Newark Laboratory is NADCAP approved for chemical testing (OES).

OCT 04 2011 

CERTIFICATION

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

John R. Despins, Technical Manager

John R. Despins

Plant Serial: 8267

Kaiser Order Number: 214518953

Line Item: 1


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KAISER ALUMINUM

SHIP TO:

SOLD TO:

CHERRY AEROSPACE,SPS TECH LLC
ATTN ACCTS PAYABLE
P. O. BOX 2157
SANTA ANA, CA. 92707-0157

Customer PO Number PO126318		NW WORK ORDER NO. 03400	
DESCRIPTION .0980 2017 T37 22" CL			
CUSTOMER PART NO.	ALLOY 2017	TEMPER T37	We hereby certify that the material covered by this report has been inspected in accordance with, and has been found to meet, the applicable requirements described herein, including any specifications forming a part of the description, and that samples representative of the material met the composition limits and had the mechanical properties shown on this sheet.
NW PART NO. D098Z2		DATE SHIPPED 8/29/2011	
WEIGHT SHIPPED 552			

LOT NUMBER	# OF TESTS	ULTIMATE		YIELD		% ELONGATION	
		STRENGTH K.S.I.		STRENGTH K.S.I.			
		Min	Max	Min	Max		
K846824	1	72.18	72.18				

COMMENTS:
M051.098 REV K
QQA-430C
MILL SOURCE KAISER
MADE IN USA

SEP 21 2011



K845824



A6811

CHEM COMP	ALLOY	SILICON		IRON		COPPER		MANGANESE		MAGNESIUM		CHROMIUM		OTHERS	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
	2017	0.20	0.80		0.70	3.50	4.50	0.40	1.00	0.40	0.80		0.10	0.05	0.15
		NICKEL		ZINC		TITANIUM		LEAD		BISMUTH					
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
					0.25		0.15								
		ALUMINUM REMAINDER													

KAISER ALUMINUM

FABRICATED PRODUCTS

Kaiser Aluminum & Chemical
600 Kaiser Drive
Heath, OH 43056-1088
740-522-1151

*Best in
Class*

CERTIFIED TEST REPORT

<http://Certs.KaiserAluminum.com>

Specifications

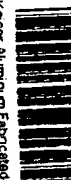
QQ-A-430 REV C

Miscellaneous Notes

Made in USA

Mercury is not a normal contaminant in aluminum alloys. Neither mercury nor any of its compounds were utilized by Kaiser Aluminum in the manufacture of this material. Actual (Act) chemical composition is from representative samples taken during the ingot casting process. Independent chemical analysis will vary from these values because of natural variation in the process and testing error. This test report shall not be reproduced, except in full, without the written approval of Kaiser Aluminum. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law. Chemical analysis performed in accordance with ASTM E 1251-07. The Newark facility is AS9100B:2004 approved. The Newark Laboratory is NADCAP approved for chemical testing (OES).

Kaiser Aluminum Fabricated
K949872



A68111

SEP 21 2011



CERTIFICATION

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

Warren Marcucci, Technical Manager

Warren Marcucci

Plant Serial: 16463

Kaiser Order Number: 624530593

Page 2 of 2

Line Item: 1

KAISER ALUMINUM FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT
<http://Certs.KaiserAluminum.com>

Kaiser Aluminum & Chemical
600 Kaiser Drive
Heath, OH 43056-1088
740-522-1151

CUSTOMER PO NUMBER: K-1013		CUSTOMER PART NUMBER: 6D37L2		PRODUCT DESCRIPTION: ALY-JUMBO	
KAISER ORDER NUMBER: 624530593	LINE ITEM: 1	SHIP DATE: 04/20/2011	ALLOY: 2017A	TEMPER: O	
WEIGHT SHIPPED: 20580 lbs.	QUANTITY: 88 pcs.	B/L NUMBER: 8943	DIAM/DAF/THKNS: 0.375 in.	WIDTH: 0.000 in.	LENGTH: 0.0 in.
SHIP TO: FLORENCE 1547 HELTON DRIVE FLORENCE, AL 35630			SOLD TO: FLORENCE 1547 HELTON DRIVE FLORENCE, AL 35630		

Test Code: 8000

Actual Physical Properties

Lot No.	No. Tests		WGE %	WGU ksi
846824	3	MIN	27.3	26.0
		MAX	29.3	26.2

Chemical Composition, WT. % (Aluminum Remainder)

Lot Cast/Drop ChemID		Si	Fe	Cu	Mn	Mg	Cx	Zn	Ti	Zr
846824										
21-1F2	Act.	0.48	0.28	4.1	0.60	0.66	0.03	0.16	0.02	0.00
160240										
Chemical	Min	0.20		3.5	0.40	0.40				
Limits	Max	0.8	0.7	4.5	1.0	1.0	0.10	0.25	0.05	0.05
	Others	Each	0.05	Max			Total	0.15	Max	

SEP 21 2011
322
AUSTIN

CERTIFICATION

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

Warren Marcucci, Technical Manager

Warren Marcucci

Plant Serial: 16463

Kaiser Order Number: 624530593

Page 1 of 2

Line Item: 1



A68111

KAISER ALUMINUM FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT
<http://Certs.KaiserAluminum.com>

Kaiser Aluminum & Chemical
600 Kaiser Drive
Heath, OH 43066-1088
740-522-1151

CUSTOMER PO NUMBER: 13170-ALLFAST		CUSTOMER PART NUMBER: 8G37L1		PRODUCT DESCRIPTION: ALY-JUMBO	
KAISER ORDER NUMBER: 214518953	LINE ITEM: 1	SHIP DATE: 05/07/2010	ALLOY: 2117	TEMPER: O	
WEIGHT SHIPPED: 37,109 Lbs	QUANTITY: 182 pcs.	BL NUMBER: 5356	DIAM/DAF/THKNS: 0.375 in.	WIDTH: 0.000 in.	LENGTH: 0.0 in.
SHIP TO: NICHOLS WIRE INC 1547 HELTON AVE FLORENCE, AL 35630			SOLD TO: NICHOLS WIRE INC. 1547 HELTON AVE FLORENCE, AL 35630		

Test Code: 8000

Actual Physical Properties

Lot No.	No. Tests	WGU
845005		ksi

Chemical Composition, WT. % (Aluminum Remainder)

Lot		Si	Fe	Cu	Mn	Mg	Cr	Zn
Cast/Drop								
ChemID								
845005								
65-4F2	Act.	0.38	0.39	2.9	0.14	0.40	0.07	0.18
150135								
Chemical	Min			2.2		0.20		
Limits	Max	0.8	0.7	3.0	0.20	0.50	0.10	0.25
	Others	Each	0.05	Max		Total	0.15	Max

Kaiser Aluminum Fabricated-
845005



A68336

CERTIFICATION **OCT 04 2011**



Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

John R. Despina, Technical Manager

John R. Despina

Plant Serial: 8267

Kaiser Order Number: 214518953

Line Item: 1

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CHERRY[®] AEROSPACE

SPS Performance Division, a PCC Company

1224 East Warner Avenue
Santa Ana, CA 92707-0157



Accredited

Nadcap[™]

Chemical Processing

Heat Treating

ISO/IEC 17025

Material Testing Lab

Final Inspection & Test Report

Cherry[®] Rivet

An ISO9001 and AS9100 registered company. OASIS #6111041606

Lot I.D. No.: **87574434**

Rev: -

Customer Parts List

<u>Customer Part Number</u>	<u>Rev</u>	<u>Proc. Spec.</u>	<u>Rev</u>
MS20600AD4W3	1	MIL-R-7885	D2

Warehouse 2: Parts Falling below a 6 Month Trend Quantity

Part No.	Description	Quantity	UOM
CR9163-4-03	CR RIVET	5,490	Pcs

18.000 TO WHSE #2

BALANCE TO STOCK



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO24957

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
5	60	EA	MS21250-05006		989310	3V FASTENERS	1BR65		


Jason Lewis
Vice President of Quality

07/11/14



3-V FASTENER CO., INC.

3-V Fastener Co., Inc.
320 Reed Circle
Corona, CA 92879
Tel: 951-734-4391
Fax: 951-734-0127
www.3VFasteners.com

PACKING LIST

SHIPPED TO:

B/E AEROSPACE

9835 NW 14TH STREET
MIAMI FL 33172

10 0 0 5 5 4 3 2 8

CUSTOMER	OUR ORDER NO.	PICK SLIP NO.	YOUR ORDER NO.	DATE PRINTED
141327	106559	1523760	0BPN96	08/22/2012

					989310	4,975
1.000	MS21250-05006	N/A				
	REV. 1					

4,975



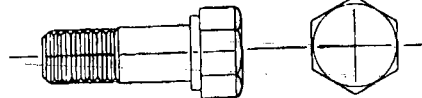
3V™ FASTENERS

PRECISION AEROSPACE FASTENERS

a **PE**® Company

320 Reed Circle • Corona, CA 92879
Tel: 951-734-4391 • FAX: 951-734-9488

10 00554328



TEST CERTIFICATION

Cert # : 54997 Cert Date: 08/23/12 LOT #: 989310 Page: 1
02/01/12

Cust # : 141327

P.O. #: 0BPN96

Customer : B/E AEROSPACE

P.O. Qty: 4975

Ship To : MIAMI FL

Ship #: 1523760

Ship Qty: 4975

Part #: MS21250-05006

MFG. Part #: MS21250-05006 REV. 1

Material Spec: AMS6322N
Type: 8740
Code: 13134

Heat #: 10149350
Mill, Vendor: WIRE TECH / CHARTER STEEL
Procure Spec: NASM8831 REV. 4

Hardness per NASM1312-6, ASTM E 18 or E 384
Minimum Requirement: 39-43 HRC

42.0	42.0	42.0	43.0	43.0
43.0	43.0	43.0	43.0	43.0
43.0	43.0	43.0	43.0	43.0

Metallurgical Tests
Hardness: N/A

Grain Size: N/A Decarb: NONE

Metallurgical, Special Process and Subcontracted Test Information
THREADS INSPECTED PER MIL-S-8879C N.3, AS8879D OR MIL-S-7742D A
MACRO AND MICROSTRUCTURE SATISFACTORY 5 PCS
HEAT TREAT PER AMS2759/1E BY CHT #114393
CAD PER AMS-QQ-P-416C TYII CL.2 BY QCP #117996
100% MAG PER ASTM E 1444/E1444-11 BY QCP #118529
HYDROGEN EMBRITTLEMENT PER NASM-1312-5 BY ATLAS #105187

B/E Aerospace, Inc. - Consumables Management
Self Release

3V
INSP
01

Signature and Stamp: 8-23-12
Date:

THIS TEST CERTIFICATION SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT
WRITTEN APPROVAL OF 3V FASTENERS CO., INC. TESTING LABORATORY.
THIS CERTIFICATION SHALL NOT BE USED BY THE CUSTOMER TO CLAIM PRODUCT
ENDORSEMENT BY ANY AGENCY OF THE U.S. GOVERNMENT.
3V FASTENERS CERTIFIES THAT THE PRODUCT SHIPPED ON ABOVE PURCHASE ORDER
WERE MANUFACTURED, INSPECTED AND TESTED IN COMPLIANCE WITH ALL APPLICABLE
PRINTS AND SPECIFICATIONS. ALL SUPPORTING DOCUMENTATION IS ON FILE AT 3V.
ACCREDITED TO AS9100C, ACCREDITED ISO 9001:2008.
SAI GLOBAL CERT-0049384, CAGE CODE 1ER65, COO:USA
BAE APPROVAL BAE/AG/30148/CAL, AIRBUS APPROVAL 30085.
THE RAW MATERIAL USED TO MANUFACTURE THESE PARTS WAS MELTED IN THE USA
OR A QUALIFYING COUNTRY AND COMPLIES WITH THE APPLICABLE SECTIONS
OF DFARS 252-225.

QUALITY ASSURANCE LAB SUPERVISOR

Daniel E. Henson 8-23-12
DANIEL E. HENSON



B/E Aerospace, Inc.

Page: 1 of 2

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

10 00554328

Material Certification

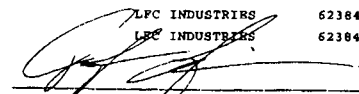
The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: B/E AEROSPACE CM II SA

PURCHASE ORDER#: 4500142203

BAE NO. BAE/AG/20027/MAA "THE WORK PERFORMED IS IN ACCORDANCE WITH BAE/AG/QC/SCI PART 2".
AIRBUS NO. 20107

QUANTITY	U/M	PART-NUMBER	CUST REP#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
20	EA	HW17-08DP		5701368-000	ALCOA FASTENING/RHPU 52828			
4000	EA	CR2672CW-3-05		87560234	CHERRY AEROSPACE SAN 11815			
3222	EA	NAS6204-16						
		QTY: 2072		51115	LPC INDUSTRIES		62384	
		QTY: 1150		50631	LPC INDUSTRIES		62384	


Jason Lewis
Vice President of Quality
08/30/13

Inv #HNH618 08/02/13



B/E Aerospace, Inc.

Page: 2 of 2

CONSUMABLES MANAGEMENT

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www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


10 00554328

Material Certification

BAE NO. BAE/AG/20027/MAA "THE WORK PERFORMED IS IN ACCORDANCE WITH BAE/AG/QC/SCI PART 2".

AIRBUS NO. 20107

QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
52	EA	NAS6604D6		59677	MAC FASTENERS	ORFT4		
102	EA	NAS6604D9		315304	CAL SCREW	8Z507		
770	EA	NAS7204A5		63338	MAC FASTENERS	ORFT4		
1500	EA	MS24665-306		CDMS100112A	WESTERN WIRE/FENTON	65029		
100	EA	AS41104		8083389	MONADNOCK/LISI AEROS	60119		
50	EA	A113-2B		31534	AF FASTENERS	U4960		
200	EA	CR3524P5-7		87120508	CHERRY AEROSPACE SAN	11815		
1050	EA	NAS1587-6		X5194	ANILLO INDUSTRIES	10630		
932	EA	NAS1304-18		S28444	LFC INDUSTRIES	62384		
1402	EA	AN924-5J		7208	INLAND MACHINE	6W617		
733	EA	MS21250-05006		989310	3V FASTENERS	1ER65		
1066	EA	HST 10 BJ 5 8	HST10BJ5-8	6125398 L251	SPS/BROOKS DIV.	K5673		
210	EA	NAS1756-12		12B11C13-11839	AMERICAN EDGE	0BPC3		
800	EA	PLT115-6-5		0038490A	MONOGRAM	98524		
367	EA	CR7774S05-05RE		87644493	CHERRY AEROSPACE SAN	11815		
102	EA	HST11AG6-2		632326	BLANC AERO/LISI RUBB	U6300		
23	EA	NAS1802-3-32		100663	3V FASTENERS	1ER65		


Jason Lewis
Vice President of Quality

08/30/13

Inv #HNH618 08/02/13



3-V FASTENER CO., INC.

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320 Reed Circle
Corona, CA 92879
Tel: 951-734-4391
Fax: 951-734-0127
www.3VFasteners.com

PACKING LIST

SHIPPED TO:
B/E AEROSPACE
9835 NW 14TH STREET
MIAMI FL 33172

10 0 0 5 5 4 3 2 8

CUSTOMER	OUR ORDER NO.	PICK SLIP NO.	YOUR ORDER NO.	DATE PRINTED
141327	106559	1523760	0BPN96	08/22/2012

					989310	4,975
1.000	MS21250-05006 REV. 1	N/A				
					4,975	



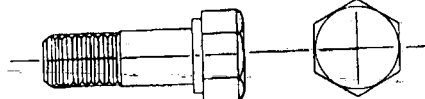
3V™ FASTENERS

PRECISION AEROSPACE FASTENERS

a PEM® Company

320 Reed Circle • Corona, CA 92879
Tel: 951-734-4391 • FAX: 951-734-9488

10 00554328



TEST CERTIFICATION

Cert # : 54997 Cert Date: 08/23/12 LOT #: 989310 Page: 1
02/01/12

Cust # : 141327

P.O. #: 0BPN96

Customer : B/E AEROSPACE

P.O. Qty: 4975

Ship To : MIAMI FL

Ship #: 1523760

Ship Qty: 4975

Part #: MS21250-05006

MFG. Part #: MS21250-05006 REV. 1

Material Spec: AMS6322N

Heat #: 10149350

Type: 8740

Mill, Vendor: WIRE TECH / CHARTER STEEL

Code: 13134

Procure Spec: NASM8831 REV. 4

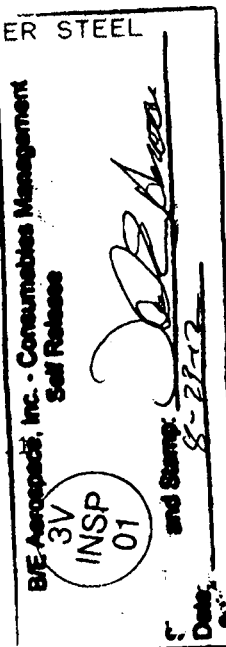
Hardness per NASM1312-6, ASTM E 18 or E 384
Minimum Requirement: 39-43 HRC

42.0	42.0	42.0	43.0	43.0
43.0	43.0	43.0	43.0	43.0
43.0	43.0	43.0	43.0	43.0

Metallurgical Tests
Hardness: N/A

Grain Size: N/A Decarb: NONE

Metallurgical, Special Process and Subcontracted Test Information
THREADS INSPECTED PER MIL-S-8879C N.3, AS8879D OR MIL-S-7742D A
MACRO AND MICROSTRUCTURE SATISFACTORY 5 PCS
HEAT TREAT PER AMS2759/1E BY CHT #114393
CAD PER AMS-QQ-P-416C TYII CL.2 BY QCP #117996
100% MAG PER ASTM E 1444/E1444-11 BY QCP #118529
HYDROGEN EMBRITTLEMENT PER NASM-1312-5 BY ATLAS #105187



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THIS CERTIFICATION SHALL NOT BE USED BY THE CUSTOMER TO CLAIM PRODUCT ENDORSEMENT BY ANY AGENCY OF THE U.S. GOVERNMENT.
3V FASTENERS CERTIFIES THAT THE PRODUCT SHIPPED ON ABOVE PURCHASE ORDER WERE MANUFACTURED, INSPECTED AND TESTED IN COMPLIANCE WITH ALL APPLICABLE PRINTS AND SPECIFICATIONS. ALL SUPPORTING DOCUMENTATION IS ON FILE AT 3V.
ACCREDITED TO AS9100C, ACCREDITED ISO 9001:2008.
SAI GLOBAL CERT-0049384, CAGE CODE 1ER65, COO:USA
BAE APPROVAL BAE/AG/30148/CAL, AIRBUS APPROVAL 30085.
THE RAW MATERIAL USED TO MANUFACTURE THESE PARTS WAS MELTED IN THE USA OR A QUALIFYING COUNTRY AND COMPLIES WITH THE APPLICABLE SECTIONS OF DFARS 252-225.

QUALITY ASSURANCE LAB SUPERVISOR

DANIEL E. HENSON

Daniel E. Henson 8-23-12



B/E Aerospace, Inc.

Page: 1 of 2

CONSUMABLES MANAGEMENT

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Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

10 00554328

Material Certification

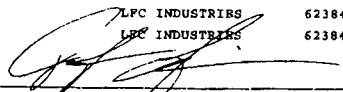
The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: B/E AEROSPACE CM II SA

PURCHASE ORDER#: 4500142203

BAE NO. BAE/AG/20027/MAA "THE WORK PERFORMED IS IN ACCORDANCE WITH BAE/AG/QC/SCI PART 2".
AIRBUS NO. 20107

QUANTITY	U/M	PART-NUMBER	CUST REP#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
20	EA	HW17-08DP		5701368-000	ALCOA FASTENING/REPU	52828		
4000	EA	CR2672CW-3-05		87560234	CHERRY AEROSPACE SAN	11815		
3222	EA	NAB6204-16						
		QTY: 2072		51115	LFC INDUSTRIES	62384		
		QTY: 1150		50631	LFC INDUSTRIES	62384		


Jason Lewis
Vice President of Quality
08/30/13

Inv #HNH618 08/02/13



B/E Aerospace, Inc.

Page: 2 of 2

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

1000554328

Material Certification

BAE NO. BAE/AG/20027/MAA "THE WORK PERFORMED IS IN ACCORDANCE WITH BAE/AG/QC/SCI PART 2".

AIRBUS NO. 20107

QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
52	EA	NAS6604D6		59677	MAC FASTENERS	ORPT4		
102	EA	NAS6604D9		315304	CAL SCREW	82507		
770	EA	NAS7204A5		63338	MAC FASTENERS	ORPT4		
1500	EA	MS24665-306		CDM6100112A	WESTERN WIRE/FENTON	65029		
100	EA	AS41104		8083389	MONADNOCK/LISI AEROS	60119		
50	EA	A113-2B		31534	AF FASTENERS	U4960		
200	EA	CR3524P5-7		07120508	CHERRY AEROSPACE SAN	11815		
1050	EA	NAS1587-6		X5194	ANILLO INDUSTRIES	10630		
932	EA	NAS1304-18		S28444	LPC INDUSTRIES	62384		
1402	EA	AN924-5J		7208	INLAND MACHINE	6W617		
733	EA	MS21250-05006		989310	3V FASTENERS	1ER65		
1066	EA	HST 10 BJ 5 8	HST10BJ5-8	6125398 L251	SPS/BROOKS DIV.	K5673		
210	EA	NAS1756-12		12B11C13-11839	AMERICAN EDGE	0BFC3		
800	EA	PLT115-6-5		0038490A	MONOGRAM	98524		
367	EA	CR7774S05-05BE		87644493	CHERRY AEROSPACE SAN	11815		
102	EA	HST11AG6-2		632326	BLANC AERO/LISI RUGB	U6300		
23	EA	NAS1802-3-32		100663	3V FASTENERS	1ER65		

08/30/13

Jason Lewis
Vice President of Quality

Inv #HNH618 08/02/13



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

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Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23658

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
1	50 EA		MS17984C413	MS17984-C413	1428845	AVIBANK MFG.	84256		


Jason Lewis
Vice President of Quality

07/11/14

** DEARS ** ** CERT Q13-P **



AV BANK
MFG. INC.

AEROSTRUCTURES DIVISION, A PCC COMPANY

11500 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605

PHONE: (818) 392-2100 • FAX: (818) 255-2094

No ozone depleting substances used in processes.

CERTIFICATE OF CONFORMANCE

SHIPPER

DATE SHIPPED

06/09/14

PAGE	OF	DATE ENTERED	SALES ORDER NO.
1	2	02/07/14	690479-8074

B 103866
I B/E AEROSPACE, INC. (MIAMI)
L 10000 N.W. 15TH TERRACE
L

T MIAMI, FL
O USA 33172

S B/E AEROSPACE CONSUMABLE MGMNT
H 9835 NW 14TH ST
I
P

T MIAMI, FL
O USA 33172

CUSTOMER ORDER NO. 0WEH24				CONTRACT NUMBER				RATING		ORDERED BY ROHAN		REC'D BY GLE		TERRITORY NO. 124	
0	1	1	3	N	N	R		TYPE OF INSPECTION		TERMS 1/2% 10, NET 30		FREIGHT NOHO/COLLECT			
SHIPPED VIA FEDEX GROUND															
ITEM NO.	NO. SHIPPED UNITS			PART NUMBER / DESCRIPTION								NO. BACKORDERED			
1	947 E			FEDEX ACCT# 0331-0149-0 QAP 33.0 CLAUSES A,A.1,B,C,E,H,P,U.V APPLY *** 3 LOT MAX *** BLC4BA13S MS17984C413 SHIP#: 1 QTY : 2 LOT:1368427 DUE : AREA :C6 AISLE :2 SEC:1 SHELF SHIP#: 1 QTY : 731 LOT:1427042 DUE : AREA :NS AISLE :E SEC:19 SHELF SHIP#: 1 QTY : 177 LOT:1428845 DUE : AREA :NS AISLE :E SEC:19 SHELF SHIP#: 1 QTY : 37 LOT:1438753 DUE : AREA : AISLE : SEC: SHELF								53			
1.1	1 L			270-CERT Q13-P CHEM & PHY CERTS 1 SHIP#: 1 QTY : 1 LOT: DUE : AREA : AISLE : SEC: SHELF								0			
PULLED BY		SHIPPED BY		SHIP VIA		DATE SHIPPED		WAYBILL/OTHER INFO				NO. OF PKGS.		WEIGHT	

We hereby certify that all materials used in the manufacture of parts covered by this report conform to the material specifications called for by the above purchase order. We further certify that the parts are manufactured in accordance with applicable drawings or specifications current on the date on which the order was placed. Test reports covering materials in these parts, and indicating conformance with applicable specifications, are on file and subject to examination. No ozone depleting substances were used in processes. Parts are mercury free of contamination.

WI-14-AMS-004 REV:NC

AVIBANK MFG., INC.

BY: *[Signature]*
AUTHORIZED QUALITY CONTROL REPRESENTATIVE

** DEARS ** ** CERT Q13-P **



AVIBANK
MFG. INC.

AEROSTRUCTURES DIVISION, A PCC COMPANY

11500 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605

PHONE: (818) 392-2100 • FAX: (818) 255-2094

No ozone depleting substances used in processes.

CERTIFICATE OF CONFORMANCE

SHIPPER

DATE SHIPPED

06/09/14

PAGE	OF	DATE ENTERED	SALES ORDER NO.
2	2	02/07/14	690479-8074

B 103866
I B/E AEROSPACE, INC. (MIAMI)
L 10000 N.W. 15TH TERRACE
L

T MIAMI, FL
O USA 33172

S B/E AEROSPACE CONSUMABLE MGMNT
H 9835 NW 14TH ST
I
P

T MIAMI, FL
O USA 33172

CUSTOMER ORDER NO.				CONTRACT NUMBER				RATING		ORDERED BY		REC'D BY		TERRITORY NO.	
0WEH24										ROHAN		GLE		124	
Q	1	1	3	N	N	R		TYPE OF INSPECTION		TERMS		FREIGHT			
										1/2% 10, NET 30		NOHO/COLLECT			
SHIPPED VIA															
FEDEX GROUND															

ITEM NO.	NO. SHIPPED	UNITS	PART NUMBER / DESCRIPTION	NO. BACKORDERED		
			<p>TO OUR VALUED CUSTOMERS A RETURN MATERIAL AUTHORIZATION (RMA) NUMBER IS REQUIRED FOR ALL PRODUCTS RETURNED TO AVIBANK TO REQUEST A RMA NUMBER CONTACT YOUR AVIBANK SALES ASSOCIATE AT 818/392-2100</p> <p>THESE COMMODITIES WERE EXPORTED FROM AVIBANK MFG., INC. IN ACCORDANCE WITH EXPORT ADMINISTRATION REGULATIONS OR INTERNATIONAL TRAFFIC IN ARMS REGULATIONS. DIVERSION CONTRARY TO U.S. LAW IS PROHIBITED. COMPLIANT WITH DFARS 252.225.7014 ALT 1</p>			
PULLED BY	SHIPPED BY	SHIP VIA	DATE SHIPPED	WAYBILL/OTHER INFO.	NO. OF PKGS.	WEIGHT

We hereby certify that all materials used in the manufacture of parts covered by this report conform to the material specifications called for by the above purchase order. We further certify that the parts are manufactured in accordance with applicable drawings or specifications current on the date on which the order was placed. Test reports covering materials in these parts, and indicating conformance with applicable specifications, are on file and subject to examination. No ozone depleting substances were used in processes. Parts are mercury free of contamination.

WI-14-AMS-004 REV:NC

AVIBANK MFG., INC.

BY: AUTHORIZED QUALITY CONTROL REPRESENTATIVE

*** DEARS *** ** CERT Q13-P ***



AVI BANK
AEROSTRUCTURES DIVISION, A PCC COMPANY

11500 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605

PHONE: (818) 392-2100 • FAX: (818) 255-2094

No ozone depleting substances used in processes.

PACKING SLIP

SHIPPER

DATE SHIPPED

06/09/14

PAGE	OF	DATE ENTERED	SALES ORDER NO.
1	2	02/07/14	690479-8074

B 103866
I B/E AEROSPACE, INC. (MIAMI)
L 10000 N.W. 15TH TERRACE
L
T MIAMI, FL
O USA 33172

S B/E AEROSPACE CONSUMABLE MGMNT
H 9835 NW 14TH ST
I
P
T MIAMI, FL
O USA 33172

CUSTOMER ORDER NO.	CONTRACT NUMBER	RATING	ORDERED BY	REC'D BY	TERRITORY NO.
0WEH24			ROHAN	GLE	124

QTY	PKT	CERT	INV	DO 250 REQ'D	PRE 250 REQ'D	RESCALE OR TAX	VAR %	TYPE OF INSPECTION	TERMS	FREIGHT
0	1	1	3	N	N	R			1/2% 10, NET 30	NOHO/COLLECT

SHIPPED VIA

FEDEX GROUND

ITEM NO.	NO. SHIPPED	UNITS	PART NUMBER / DESCRIPTION	NO BACKORDERED
1			FEDEX ACCT# 0331-0149-0 QAP 33.0 CLAUSES A,A.1,B,C,E,H,P.U.V APPLY *** 3 LOT MAX *** 947 E BLC4BA13S MS17984C413 SHIP#: 1 QTY : 2 LOT:1368427 DUE : AREA :C6 AISLE :2 SEC:1 SHELF SHIP#: 1 QTY : 731 LOT:1427042 DUE : AREA :NS AISLE :E SEC:19 SHELF SHIP#: 1 QTY : 177 LOT:1428845 DUE : AREA :NS AISLE :E SEC:19 SHELF SHIP#: 1 QTY : 37 LOT:1438753 DUE : AREA : AISLE : SEC: SHELF	53
1.1	1	L	270-CERT Q13-P CHEM & PHY CERTS 1 SHIP#: 1 QTY : 1 LOT: AREA : AISLE : SEC:	0

PULLED BY	SHIPPED BY	SHIP VIA	DATE SHIPPED	WAYBILL/OTHER INFO.	NO. OF PKGS.	WEIGHT
			6/9/14		1	

NOTICE - IF INVOICE IS NOT RECEIVED WITHIN 10 DAYS OF SHIPMENT, PLEASE NOTIFY US IMMEDIATELY.

ANY CLAIM SHORTAGES OR ADJUSTMENTS MUST BE MADE WITHIN 10 DAYS FROM RECEIPT OF GOODS. "WE HEREBY CERTIFY THAT THESE GOODS WERE PRODUCED IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS OF SECTIONS 6, 7, & 12 OF THE FAIR LABOR STANDARDS ACT, AS AMENDED, AND OF REGULATIONS AND ORDERS OF THE UNITED STATES DEPARTMENT OF LABOR ISSUED UNDER SECTION 14 THEREOF."

NO OZONE DEPLETING SUBSTANCES USED IN PROCESSES. PARTS ARE MERCURY FREE OF CONTAMINATION.

WI-14-AMS-004 REV:NC

** DEARS ** ** CERT Q13-P **



AV BANK
MFG. INC.

AEROSTRUCTURES DIVISION, A PCC COMPANY

11500 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605

PHONE: (818) 392-2100 • FAX: (818) 255-2094

No ozone depleting substances used in processes.



PACKING SLIP

SHIPPER

DATE SHIPPED

06/09/14

PAGE	OF	DATE ENTERED	SALES ORDER NO.
2	2	02/07/14	690479-8074

B 103866
I B/E AEROSPACE, INC. (MIAMI)
L 10000 N.W. 15TH TERRACE
L
T MIAMI, FL
O USA 33172

S B/E AEROSPACE CONSUMABLE MGMNT
H 9835 NW 14TH ST
I
P
T MIAMI, FL
O USA 33172

CUSTOMER ORDER NO. 0WEH24				CONTRACT NUMBER				RATING		ORDERED BY ROHAN		REC'D BY GLE		TERRITORY NO. 124	
P/S		CERT	INV	DP 250 REQ'D	PRES PKG REQ'D	RESALE ON TAX	VAR %	TYPE OF INSPECTION		TERMS 1/2% 10, NET 30		FREIGHT NOHO/COLLECT			
0		1	1	3	N	N	R								
SHIPPED VIA FEDEX GROUND															
ITEM NO.		NO. SHIPPED		UNITS		PART NUMBER / DESCRIPTION						NO. BACKORDERED			
						<p>TO OUR VALUED CUSTOMERS A RETURN MATERIAL AUTHORIZATION (RMA) NUMBER IS REQUIRED FOR ALL PRODUCTS RETURNED TO AVIBANK TO REQUEST A RMA NUMBER CONTACT YOUR AVIBANK SALES ASSOCIATE AT 818/392-2100</p> <p>THESE COMMODITIES WERE EXPORTED FROM AVIBANK MFG., INC. IN ACCORDANCE WITH EXPORT ADMINISTRATION REGULATIONS OR INTERNATIONAL TRAFFIC IN ARMS REGULATIONS. DIVERSION CONTRARY TO U.S. LAW IS PROHIBITED. COMPLIANT WITH DFARS 252.225.7014 ALT 1</p>									
PULLED BY		SHIPPED BY		SHIP VIA		DATE SHIPPED		WAYBILL/OTHER INFO.				NO. OF PKGS.		WEIGHT	

NOTICE - IF INVOICE IS NOT RECEIVED WITHIN 10 DAYS OF SHIPMENT, PLEASE NOTIFY US IMMEDIATELY.

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WI-14-AMS-004 REV:NC

B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO24957

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
1	20	EA	MS17984C413		1438753	AVIBANK MFG.		84256	



Jason Lewis
Vice President of Quality

07/11/14

** DEARS ** ** CERT Q13-P **



AVIBANK
MFG. INC.

AEROSTRUCTURES DIVISION, A PCC COMPANY

11500 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605

PHONE: (818) 392-2100 • FAX: (818) 255-2094

No ozone depleting substances used in processes.

CERTIFICATE OF CONFORMANCE

SHIPPER

DATE SHIPPED

06/09/14

PAGE	OF	DATE ENTERED	SALES ORDER NO.
1	2	02/07/14	690479-8074

B 103866
I B/E AEROSPACE, INC. (MIAMI)
L 10000 N.W. 15TH TERRACE
L
T MIAMI, FL
O USA 33172

S B/E AEROSPACE CONSUMABLE MGMNT
H 9835 NW 14TH ST
I
P
T MIAMI, FL
O USA 33172

CUSTOMER ORDER NO.	CONTRACT NUMBER	RATING	ORDERED BY	REC'D BY	TERRITORY NO.
OWEH24			ROHAN	GLE	124

P/S	CERT	INV	DO 250 REQ'D	PRES PKG REQ'D	RESALE OR TAX	VAR %	TYPE OF INSPECTION	TERMS	FREIGHT
0	1	1	3	N	N	R		1/2% 10, NET 30	NOHO/COLLECT

SHIPPED VIA

FEDEX GROUND

ITEM NO.	NO. SHIPPED	UNITS	PART NUMBER / DESCRIPTION	NO. BACKORDERED
1			FEDEX ACCT# 0331-0149-0 QAP 33.0 CLAUSES A,A.1,B,C,E,H,P.U.V APPLY *** 3 LOT MAX *** 947 E BLC4BA13S MS17984C413 SHIP#: 1 QTY : 2 LOT:1368427 DUE : AREA :C6 AISLE :2 SEC:1 SHELF SHIP#: 1 QTY : 731 LOT:1427042 DUE : AREA :NS AISLE :E SEC:19 SHELF SHIP#: 1 QTY : 177 LOT:1428845 DUE : AREA :NS AISLE :E SEC:19 SHELF SHIP#: 1 QTY : 37 LOT:1438753 DUE : AREA : AISLE : SEC: SHELF	53
1.1	1	L	270-CERT Q13-P CHEM & PHY CERTS 1 SHIP#: 1 QTY : 1 LOT: AREA : AISLE : SEC:	0

PULLED BY	SHIPPED BY	SHIP VIA	DATE SHIPPED	WAYBILL/OTHER INFO	NO. OF PKGS.	WEIGHT
	na	fed	6/9/14			

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WI-14-AMS-004 REV:NC

AVIBANK MFG., INC.

BY: *[Signature]*
AUTHORIZED QUALITY CONTROL REPRESENTATIVE

** DEARS ** ** CERT Q13-P **



AVIBANK
MFG. INC.

AEROSTRUCTURES DIVISION, A PCC COMPANY

11500 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605

PHONE: (818) 392-2100 • FAX: (818) 255-2094

No ozone depleting substances used in processes.

CERTIFICATE OF CONFORMANCE

SHIPPER

DATE SHIPPED

06/09/14

PAGE	OF	DATE ENTERED	SALES ORDER NO.
2	2	02/07/14	690479-8074

B 103866
I B/E AEROSPACE, INC. (MIAMI)
L 10000 N.W. 15TH TERRACE
L
T MIAMI, FL
O USA 33172

S B/E AEROSPACE CONSUMABLE MGMNT
H 9835 NW 14TH ST
I
P
T MIAMI, FL
O USA 33172

CUSTOMER ORDER NO. 0WEH24				CONTRACT NUMBER				RATING		ORDERED BY ROHAN		REC'D BY GLE		TERRITORY NO. 124	
	P/S	CERT	INV	DD-250 REQ'D	PRES PKG REQ'D	RESALE OR TAX	VAR %	TYPE OF INSPECTION		TERMS 1/2% 10, NET 30		FREIGHT NOHO/COLLECT			
0	1	1	3	N	N	R									
SHIPPED VIA FEDEX GROUND															
ITEM NO.		NO. SHIPPED		UNITS		PART NUMBER / DESCRIPTION						NO. BACKORDERED			
						<p>TO OUR VALUED CUSTOMERS A RETURN MATERIAL AUTHORIZATION (RMA) NUMBER IS REQUIRED FOR ALL PRODUCTS RETURNED TO AVIBANK TO REQUEST A RMA NUMBER CONTACT YOUR AVIBANK SALES ASSOCIATE AT 818/392-2100</p> <p>THESE COMMODITIES WERE EXPORTED FROM AVIBANK MFG., INC. IN ACCORDANCE WITH EXPORT ADMINISTRATION REGULATIONS OR INTERNATIONAL TRAFFIC IN ARMS REGULATIONS. DIVERSION CONTRARY TO U.S. LAW IS PROHIBITED. COMPLIANT WITH DFARS 252.225.7014 ALT 1</p>									
PULLED BY		SHIPPED BY		SHIP VIA		DATE SHIPPED		WAYBILL/OTHER INFO.				NO. OF PKGS.		WEIGHT	
						6/9/14						1			

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WI-14-AMS-004 REV:NC

AVIBANK MFG., INC.

BY: AUTHORIZED QUALITY CONTROL REPRESENTATIVE

**AVIBANK**
MFG. INC.

AEROSTRUCTURES DIVISION, A PCC COMPANY

11500 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605

PHONE: (818) 392-2100 • FAX: (818) 255-2094

CERTIFIED TEST REPORT

1 of 1

CUSTOMER: B/E AEROSPACE, INC. (MIAMI)**SHOP ORDER NO./WORK ORDER NO.:** 1438753**CUSTOMER P/N:** MS17984C413**CUSTOMER P.O.:** 0WEH24**QTY. SHIPPED:** 37**AVIBANK P/N:** BLC4BA13S RV. N**PART NAME:** S/A STANDARD**PROCUREMENT SPEC:** NAS1332**BODY WO.:** 1432342 **QTY. MFG'D:** 37

PROCESS	PROCESSOR	TYPE/CLASS	SPECIFICATION
ANODIZE	K & L ANODIZING CORP. BURBANK, CA.	II/2	MIL-A-8625 'F'
HEAT TREAT	AVIBANK MFG., INC., NO. HOLLYWOOD, CA.	CH900	AMS2759 'E'
HEAT TREAT	AVIBANK MFG., INC., NO. HOLLYWOOD, CA.	HRC 40 MIN	AMS2759 'E'
PASSIVATE	AVIBANK MFG., INC., NO. HOLLYWOOD, CA.	2	AMS2700 'E'

NO.	* BOLT TENSILE (LBS.)	TORQUE (IN-LBS.)	* RETAINING DEVICE TENSILE (LBS.)	** SHEAR (LBS.)
1.	N/A	N/A	244 NF	10,061
2.	N/A	N/A	247 NF	10,111
3.	N/A	N/A	261 NF	10,107
4.				
5.				
REQT.	N/A MIN.	N/A MIN.	230 MIN.	9,200 MIN.

* BF = BALL HOLE FAILED. * TF = THREADS FAILED. * NF = NO FAILURE. ** (S) = SINGLE SHEAR. ** (D) = DOUBLE SHEAR.

OTHERS: THESE PARTS WERE LAB TESTED PER 'NAS' RQMTS AND FOUND ACCEPTABLE.
SALES ORDER NO. 690479-8074.

AVIBANK MFG., INC. CERTIFIES THAT THE PARTS LISTED ABOVE WERE MANUFACTURED IN COMPLIANCE WITH YOUR PURCHASE ORDER. ALL TEST AND INSPECTION REPORTS ARE ON FILE AT AVIBANK FOR VERIFICATION.

AUTHORIZED SIGNATURE:

NORMA CASTANAZA Q.C. CLERK

**DATE:** 06/09/14



6917

April 2014

Certificate: 833261 02 Mail To: SUMMIT STEELWORKS CORP., LTD. 2001 ELLIOTT STREET NORTH BENDONWICK NY 08902	Ship To: SUMMIT STEELWORKS CORP., LTD. 9946 U.S. 90 A SUDBURY MA 01878	Customer: 0370 002 Item Order: LP 604 5 Item Code:	Remarks: 303 Steel Finish: Cold Drawn Dia/Thk: .4053 In Leg Length: 144.00 In Corrosion:	Date: 5/06/2013 Page: 1
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[illegible][illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

NAS hereby certifies that the analysis on this specification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specification stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS.

Technical Dept. Mgr.

ERIC HZSS

M.D. 12/26/13



1901 N. Narragansett Ave. • Chicago, Illinois 60639
773/804.0404 • Fax 773/804.0408
www.industeel.com
An ISO 9001 Certified Company

11/05/13

ISW Order/Invoice Number: 171013-00

SOLD TO: A9990
AVIBANK MFG. CO.

SHIP TO: A9991
AVIBANK MFG. CO.
11500 SHERMAN WAY

P.O. BOX 9909
NO HOLLYWOOD CA 91609

NO. HOLLYWOOD, CA 91605

CUSTOMER PO: 751295

085017BT

.0850"17-7 PH STAINLESS COND C CNT CLS

WEIGHT: 500

HEAT NUMBER: E121590

CHEMISTRIES

C	Mn	P	S	Si	Cr	Ni	Al
.082 ✓	.880 ✓	.029 ✓	.001 ✓	.269 ✓	16.630 ✓	7.560 ✓	.926 ✓
Mo	Cu						
.310 ✓	.255 ✓						

CERT REVIEW

MAIN LOT #
1428845, 1438753
COMPONENT LOT #
1403259
NAME
RING

PHYSICAL PROPERTIES

TENSILE: 253000C 307000CH

TORSIONS: OK

ROCKWELL #1:

BENDS: OK

ROCKWELL #2:

SALT SPRAY HOURS: CLERK: GV — NO DS —

YIELD STRENGTH: 000000C/000000CH

COATING WEIGHT:

ELONGATION:

GRAIN SIZE:

REDUCTION OF AREA:

**** MERCURY FREE ****

*** SPECIFICATIONS ***

TARIFF: 7223.00

ASTM A313-10

NAFTA: B

AMS 5678-F ✓

MELT: GB UNITED KINGDOM ✓

ORIG: GB UNITED KINGDOM ✓

MILL: INDUSTRIAL ALLOYS

DFAR: Y

ROHS: Y

Rey Domingo, Quality Control Manager



1389733

NOV 8 '13

The values and specifications herein are passed through from the manufacturer directly to the customer.
Please see reverse side or www.industeel.com for all Terms and Conditions of Sale.
Material Properties Sheet 70403-MPS Version 1 Approved by BF 11/20/12

Certified Inspection Report

11/08/13
10:28:41

Alcoa Inc.
Massena Operations
Park Avenue East, Massena, NY 13662



NAME
143306036
COMPONENT LOT #
1438845 1438753
MAIN LOT #
BUTON HANALE
CLERK: GY
NCS

Customer Bralco Metals	Customer P.O. No. 43-114050	Customer Part No.	Alcoa Order No. MMC-A9447-001	Govt. Contract No.
Ship-To Bralco Metals 15090 Northern St La Mirada, CA 90638		We hereby certify that the material covered in this report has been inspected in accordance with, and has been found to meet the applicable requirements described herein, including any specifications forming part of the description, or as previously agreed to with customer and that samples representative of the material met the composition limits and have the mechanical properties shown on the face of this sheet. Manufactured under an ISO/TS 16949 registered quality management system. Melted and manufactured in the USA.		
Date Shipped 11/08/13	Weight Shipped 2.147 lbs	Product CFRB-SMS-ROD DIA. X 12 FT		BOL 000161556
Alloy - Temper 2024-T351 ✓	Size 0.81250 IN ✓	Shape DIA	Config 12 FT	QRR

Specifications:

AMS 4120R (Except Marking)
AMS-QQA-225/6A
Material conforms to T4 requirements
QA-225/6E (1)
ASTM B211-12E1

Product produced and marked to the requirements of AMS-QQ-A-225/6 also meets the requirements of QQ-A-225/6.
Product produced and marked to the requirements of QQ-A-225/6 also meets the requirements of AMS-QQ-A-225/6. ✓

THIS METAL HAS NOT BEEN
EXPOSED TO MERCURY OR MERCURY
CONTAINING COMPOUNDS
DISSEMINATION OF DATA

TEST REQUIREMENTS		Test	Test	Test	Test	Test	Test	Test	Test	Test	Test
		U.T.S.	T.Y.S.	%Elong							
Max:											
Min:		62.0	45.0	10.0							
Test Results		Test	Test	Test	Test	Test	Test	Test	Test	Test	Test
Lot / Work Order		U.T.S.	T.Y.S.	%Elong							
MA20132517											
Max:		69.6	52.9	21.5							
Min:		68.5	52.3	19.0							

When 2 or more tests per lot are made, the highest and lowest values are reported.
Analysis obtained from one or more samples in this lot.

TEST ABBREVIATIONS

U.T.S. Ultimate Tensile Strength KSI T.Y.S. Tensile Yield Strength KSI %Elong Elongation % in 2"

Aluminum Association Chemical Composition Limits (in Weight %)

ALLOY	MAX	%SI	%FE	%CU	%MN	%MG	%CR	%ZN	%TI	%Others	%Others	%AL			
2024	MIN	0.50	0.50	4.9	0.9	1.8	0.10	0.25	0.15	0.05	0.15	Rem			
				3.8	0.30	1.2				Each	Total				

Actual Started Chemistry

LOT/WORK ORDER	MAX	%SI	%FE	%CU	%MN	%MG	%CR	%ZN	%TI	%OE	%OT	%AL			
MA20132517	MIN	0.07	0.26	4.7	0.68	1.5	0.02	0.03	0.03	LT 0.05	LT 0.15	Rem			
		0.06	0.24	4.5	0.62	1.4	0.01	0.00	0.02						

NOTES:

Mercury is not a normal contaminant in aluminum alloys and neither it nor any of its compounds are used in the manufacture of our product.
This alloy meets the requirements of EU 2011/65/EC (RoHS) and EU 2000/53/EC for lead, mercury, cadmium and hexavalent chromium.

Q. C. Review
Sig. *[Signature]*
Date *11/29/13*

Lot# 139289B

Sold to: AVIBANK MFG PO: 750515 Part: , Order No.: 444704

TR clerk signature:

Carlos A Gaspar

K & L Anodizing Corporation
Certification

Order No.: 306153

Date: 12/10/2013

Entry Date: 12/05/2013

Page: 1 of 1

To:

Avibank Mfg. Inc.
11500 Sherman Way
P.o. Box 9909
North Hollywood CA 91609-1909

Purchase Order No.: 752922

Packing List No.:

Material: 2024-T4

297424

We are pleased to provide you with the following Certification. The item(s) described were finished and accepted in accordance with the stated specification
Nadcap Accredited

Quantity	Part Number / Part Name / Part Description	Pounds
5,010	5-4AB Rev. P Button-Handle	

Mil-A-8625 Rev.F Amend. 1 KLC 001 / KLC 0007

Anodize per Mil-A-8625 Rev. F Am. 1 Type II Class 2 Black.
Mercury Contamination Free

Insp. Type	Scale	Minimum	Maximum	Number	Other
Customer Requirements:					
Visual					Sample or 100%

LSS# 8

Notice: All finishing completed by K & L Anodizing will carry a liability not to exceed the amount of the finishing charges for the work done on any material. The only exception shall be by written agreement signed by both parties.

Q. C. Review

Sig. 

Date 12/11/13

Lot# 1397977

CERT REVIEW

MAIN LOT #


1428845, 1438753

COMPONENT LOT #


KB30636

NAME

BUTTON HANDLE

CLERK: GV — NC  DS —

Nadcap AS7003 #4908143853 10/31/2015
Nadcap AC7108 #4908153454 10/31/2014


Sharyn McGinity
K & L Cert Department
K & L Anodizing Corp.



Linear Motion. Optimized.

SHIP TO: AVIBANK MFG INC
11500 SHERMAN WAY
NORTH HOLLYWOOD CA 91605
United States

CERTIFICATE OF CONFORMANCE

DELIVERY NAME:
2937200

DATE PRINTED:
21-FEB-2014

PAGE:
1 of 1

SHIP FROM: ABEK LLC
492 Birch Street
Bristol CT 06010
United States

Tel: (860) 314-3921 **Fax:** (860) 314-3942

BILL TO: AVIBANK MFG INC
11500 SHERMAN WAY
NORTH HOLLYWOOD CA 91605
United States

PICK-UP DATE: 20-FEB-2014		SHIP METHOD: UPS-Truck-Ground		FREIGHT TERMS: COLLECT - FROM ORIGIN		FSCM:		
DELIVERY TERMS EXWORKS FACTORY		TAX NAME: EXEMPT		CUSTOMER TAX NUMBER:		WAYBILL: 1Z0176470369205040		
SHIPPING INSTRUCTIONS: ACCT# 60X10X				TAG NUMBER/REF:		PO REF#:		
ITEM NUMBER	REFERENCE ITEM	ITEM DESCRIPTION	CUSTOMER PO NO.	ORDER NO.	ONE ORDER NUMBER	UOM	QTY ORDERED	QTY SHIPPED
SS0078121CXXDF	SS0078121CXXDF	5/64 440C GRADE 100 (DFAR REQUIRED) - SS0078121CXXDF	754588	1799757	1.1	MPC	100.0	97.8
COUNTRY OF ORIGIN: ****EAR99****		United States						
Lot Number	Quantity	Heat Number		Hardness Test			Hardness	
L0013815	38.8	G13158K02		HRC			60-63	
L0013813	15.0	548226		HRC			60-62	
L0013814	44.0	548226		HRC			60-62	
Material meets DFAR 252.225-7008:7014. ✓ Material certs meet ASTM F-2215. ✓ Material meets AMS QQ S 783 and AMS 5630 ✓ Heat Treat meets AMS 2759/5 ✓ Passivation meets AMS 2700 ✓ Country of Origin (Ball manufactured): USA ✓ Country of Melt (Material manufactured): USA ✓ These commodities, technology or software, if being exported from the United States must be exported in accordance with the Export Administration Regulations. Diversion contrary to U.S. Law is prohibited.								
CERT REVIEW								
MAIN LOT # 1428845 1438753								
COMPONENT LOT # K040065								
NAME BALL								
CLERK: GV NC DS								
NUMBER OF PACKAGES 1			GROSS WEIGHT 8.0 LB			VOLUME		
THE UNDERSIGNED, INDIVIDUALLY, AND AS THE AUTHORIZED REPRESENTATIVE OF THOMSON INDUSTRIES INC., WARRANTS AND REPRESENTS THAT; ALL THE INFORMATION SUPPLIED ABOVE IS TRUE AND ACCURATE; THE MATERIAL COVERED BY THIS CERTIFICATION CONFORMS TO ALL CONTRACT REQUIREMENTS (INCLUDING BUT NOT LIMITED TO THE DRAWING AND SPECIFICATIONS); THE INSPECTION AND THE ANALYSIS HEREIN ARE TRUE AND ACCURATE.								
QUALITY ASSURANCE MANAGER AUTHORIZED SIGNATURE								

CERTIFICATE OF TESTS ABNAHMEPRUEFZEUGNIS CERTIFICAT DE CONTROLE

CERT SERIAL# 000564343


CARPENTER

 Carpenter Technology Corporation
 101 West Barn Street, Reading, Pa. 19601
 Tel: (610) 200-2000 (800) 338-4592

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

SELLER/VERKÄUFER/VEDEUR PAGE 1 OF 2

ALN

CUSTOMER ORDER NO/BESTELL-NR./N° DE COMMANDE	CARPENTER WORKS-NR./N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
213280	W49841	09/11/06	659

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE 548226

PRODUCT DESCRIPTION: CONSUMET TYPE 440C BEARING QUAL HOT DRAWN SPHERODIZED PRECOAT

SPECIFICATION: AMS 5618 REV G (05/06)

XAMS 00-S-7638 (08/06)

XAMS 5680 REV C (05/06)

XAMS 5630 REV J (10/07)

SIZE 0.075000 IN. (1.90 MM) RD WIRE INGOT 3.

PRIMARY HEAT CHEMISTRY(WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)

C (COM)	MN (XRF)	SI (XRF)	P (XRF)	LT (COM)	CR (XRF)
1.03	0.40	0.70	0.017	.001	16.97
NI (XRF)	MO (XRF)	CU (XRF)			
0.15	0.44	0.04			

MACROETCH: TESTED TO ASTM-A-604: MAXIMUM VALUES ARE 1A. 2A. 3A. 4A

TENSILE AS SHIPPED. KSI(MPA) 110.0(758)

MAX QUENCH HARDNESS. HRC - 61 - 1925 F(1052 C) 30 MN OIL TREAT

INCLUSION RATING - ASTM E45 METHOD D

ID	THIN	HEAVY	THIN	HEAVY	THIN	HEAVY	THIN	HEAVY
3X	1.0	000	000	000	000	000	000	000
	1.5	000	000	000	000	000	000	000
	2.0	000	000	000	000	000	000	000
3A	1.0	000	000	000	000	000	000	000
	1.5	000	000	000	000	000	000	000
	2.0	000	000	000	000	000	000	000
	2.5	000	000	000	000	000	000	000

FRACTURE GRAIN SIZE: 8

CARBIDE SEGREGATION - FREE FROM EXCESSIVE SEG (VILELLAS)

DECARB - NONE (VILELLAS)

MAX QUENCH HARDNESS. HRC - 61 - 1875 F(1024 C) 30 MN AIR COOL

CONTINUED ON NEXT PAGE

Diana M. Kissling

CERTIFICATE OF TESTS ABNAHMEPRUEFZEUGNIS CERTIFICAT DE CONTROLE

CERT SERIAL# 000564343


CARPENTER

 Carpenter Technology Corporation
 101 West Bern Street, Reading, Pa. 19601
 Tel: (610) 200-2800 (800) 338-4592

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
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- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND BETA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

SELLER/VERKÄUFER/VEDEUR PAGE 2 OF 2

ALN

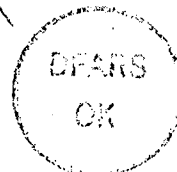
CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NUMBER/NR./N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
213288	W49841	09/11/06	659

 HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE 548226
 BILLET CHECK CHEMISTRY (WT%):

3A (TOP)	C
3X (BOTTOM)	0.06

MATERIAL PRODUCED ON THIS ORDER WAS MELTED AND MANUFACTURED IN THE U.S.A. MATERIAL HAS BEEN MELTED IN USA OR QUALIFYING COUNTRY TO DFARS REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872. CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2007 TO THE REQUIREMENTS OF ISO 9001:2000 APPROVAL CERTIFICATE 07-0869 BY PERFORMANCE REVIEW INSTITUTE. CERTIFICATE OF TEST IS PREPARED IN ACCORDANCE WITH PARAGRAPH 3.1 OF EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS.

DATE REVISED: 01/19/10

 DEANA KISSLING
 MET RELEASE/REQUIREMENTS ANALYST
 CARPENTER TECHNOLOGY CORPORATION

Deana M. Kissling

Order No: 3748481
Time 13:14:18



FRY STEEL COMPANY
Registered ISO 9001
13325 MOLETTE ST.
SANTA FE SPRINGS, CA 90670
(562) 802-2721

A08040
Cust. NO.: 760385
P.O. NO.:

CERTIFICATE OF COMPLIANCE

AVIBANK MFG INC
ATTN: ACCTS PAYABLE
P O BOX 9909
NORTH HOLLYWOOD CA 91609-1909

AVIBANK MFG
11500 SHERMAN WAY
***RECEIVING CLOSED 11:30-12**
NORTH HOLLYWOOD CA 91605-5827

04/24/14

QTY	-DESCRIPTION-	-ITEM CODE-	-HEAT NUMBER-
	CG 17CR 4NI PPT HT SOL TR PH AMS 5643 SILVER/RED		
	BARS .255"RD 12'RL	9170	E131099
	SHIP TOTAL STOCK 552 LBS OF HEAT E131099 COMPS. 3748031		

CERT REVIEW

MAIN LOT #

1438753

COMPONENT LOT #

1432342

NAME

BDSY

CLERK: GV NC DS

NOTICE

A COPY OF THE ORIGINAL MILL CERTIFICATION IS ATTACHED*

CHEMICALS & PHYSICALS ARE REPORTED THAT WILL MEET THE SPECIFICATIONS SHOWN ON THE CERTIFICATE.
EXCEPTIONS TO SPECIFICATIONS SHOULD BE SHOWN ON THE CERTIFICATION.

AUTOMATIC EXCEPTIONS TO THE SPECS LISTED ARE: LINE MARKING AND INSPECTION(I.E. MAG., SONIC, ETC.)

WE SUGGEST CONSULTING AN EXPERT ABOUT RELATED INSPECTION, PRIOR TO ALTERING THE MATERIAL FROM THE AS SHIPPED/RECEIVED
CONDITION. "DEFECT FREE" MATERIAL CAN NOT BE GUARANTEED WITHOUT PRIOR INSPECTION APPROPRIATE TO APPLICATION.

NO WELD REPAIR HAS BEEN PERFORMED AND THIS MATERIAL IS FREE FROM MERCURY AND RADIUM
CONTAMINATION AT TIME OF SHIPMENT

The willful recording of false, fictitious or fraudulent statements on this document may result as a felony under federal statutes.
*WHEN APPLICABLE

-- TO THE BEST OF OUR KNOWLEDGE MATERIAL IS CONFLICT MINERAL FREE --

Q. C. Review

Sig. *N. Sandoval*

Date 4/30/14

Lot # 1436405

Chip Sandoval
CHIP SANDOVAL - Q.C. MANAGER

FRY STEEL CO. CERTIFIES THAT THIS IS
A TRUE COPY OF THE ORIGINAL MILL TEST
REPORT NOW ON FILE
RECEIVED AND INSPECTED

TRI STAR METALS, LLC
375 VILLAGE DR.
CAROL STREAM, IL 60188
An ISO 9001:2008 Registered Company

JAN 03 2014

BY *[Signature]*
CHP SANDOVAL - Q.C. MANAGER

CERTIFICATE DATE: 12/26/13 CUSTOMER: FRY STEEL COMPANY
ORDER#: 204303 CUSTOMER PO#: 47722-1
MATERIAL: 17-4PH ✓ DESCRIPTION: .255" RD SS X 12' ✓
HEAT NUMBER: E131099 QTY. SHIPPED: 1,920 LBS
CONDITION: A - Solution Annealed, A.Q., Centerless Ground PART #: 9170

CHEMICAL COMPOSITION

C	Mn	Si	S	P	Ni	Cr	Mo	Other Elements
.015	.730	.408	.0280	.023	4.68	15.38	.170	✓ Cu=3.349 Co=.089 N=.0310 Ti=.002 ✓ Nb=.2510 Al=.002 B=.0016 Sn=.008 V=.050 W=.020 As=.006 Ca=.001 Ta=.002 Pb=.0002
✓	✓	✓	✓	✓	✓	✓	✓	

MECHANICAL VALUES

TENSILE (KSI)	YIELD (KSI)	ELONGATION (%)	REDUCTION OF AREA (%)	HARDNESS
134	122	14	67	271 HB

✓ AFTER HT CAPABILITIES 900F 1 HOUR AIR COOL

TENSILE (KSI)	YIELD (KSI)	ELONGATION (%)	REDUCTION OF AREA (%)	HARDNESS
201	199	12	54	410 HB

ADDITIONAL REMARKS:

This material meets the specifications for: SOLUTION ANNEALED AT 1800F FOR 1.5 HRS;
AMS 5643R, AMS 2303E; ASTM A484-10; Capable of ASTM A584-04 TYPE 630, ASME
A584-04 TYPE 630, & MBO-180-003 EXC HARDNESS & ULTRASONIC; DFARS 252.225.7014 &
225.7002-3(b) (1) COMPLIANT; Delta Ferrite=.38%; Micro & Macro Structures OK per AMS 5643

MATERIAL IS FREE FROM MERCURY CONTAMINATION. EN10204 3.1.B
MELT ORIGIN: ENGLAND

MATERIAL IS MANUFACTURED IN THE UNITED STATES OF AMERICA

I hereby certify that this data is correct as contained in the records of this company.

QUALITY CONTROL REPRESENTATIVE:
QSD-007 REV. ORG. 4/17/2013

[Signature]
James A. Elliott-Quality Process Manager

Q. C. Review

Sig. *[Signature]*

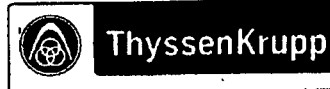
Date: 4/30/14

Lot# 1436405

E131099

255 RD

ThyssenKrupp Materials.NA
Copper and Brass Sales Division



(2)

ThyssenKrupp Materials NA 13338 Orden Drive Santa Fe Springs CA 90670

DELIVERY NOTE

AVIBANK MFG INC
11500 SHERMAN WAY
NORTH HOLLYWOOD CA 91605-5827



DATE: 01/07/2014
DOC. NO: 2402894815*
BOL. NO: 2402894815
ORDER NO: 1401799670
YOUR P/O: 729445
CUSTOMER NO: 10009895
Route: C2AC2
CONTACT: Ginger M Sanchez
TEL: 562-215-4398 ext 54398
FAX: 800-926-8310 ext 8310
EMAIL: Ginger.sanchez@thyssenkrupp.com

ALL S/S BAR MUST BE DFARS COMPLIANT
UNLD BY FORK: Y
RCVG HOURS: 6-4PM MON-FRI LNCH 12-12:30PM
6-4PM MON-FRI LNCH 12-12:30PM MAX SKID WT: 2000 MAX BUNDLE
WT: 2000

SHIP EXACT PC COUNT

We deliver at your own risk and account in accordance with our general delivery and payment terms.

ITEM	DESCRIPTION	NET QTY1 / QTY2	PACKAGE NO.
0010	XSSRD05808 T-17-4 Stainless Steel Cold Finish Cond A Round 0.1300 " (+ -.001) X 144 Mill Length Actual Chemistry/Act. Physical Standard Packaging	9,000 Feet 413 lb	1003928193
	TAGNUMBER QUANTITY UOMVENDOR VENDORPO HEAT/LOT PCS		
	2000695639 9000 FT E130597		
	SAE AMS 5643 R		

Total Gross Weight 463.000 lb

All items, not declared as partial delivery, are final quantities.

Delivery Terms: PPD gem. Incoterms 2000 Prepaid

CERTIFICATION OF COMPLIANCE

We hereby certify that mercury or any of its compounds are not used in the processing and distribution of our products. The products we distribute are not hazardous in their received state.

For MSDS sheets go to www.copperandbrass.com. We hereby certify that the material above complies with the above specifications

John R Zambetti - Director of Quality Assurance

CERT REVIEW

MAIN LOT #

1438753

COMPONENT LOT #

1432349(SB30218)

NAME

SPINDLE

CLERK: GV NC DS

TRI STAR METALS, LLC.
611 WEST LAMM ROAD
FREEPORT, IL 61032
An ISO 9001:2008 Registered Company

CERTIFICATE DATE: 10/10/13	CUSTOMER: COPPER & BRASS	
ORDER#: 202988	CUSTOMER PO#: 5400195058-R05	
MATERIAL: 17-4PH ✓	DESCRIPTION: .130" X 12'	
HEAT NUMBER: E130597	QTY. SHIPPED: 549 LBS	
CONDITION: ANNEALED	PART #: XSSRD05808	

CHEMICAL COMPOSITION

C	Mn	Si	S	P	Ni	Cr	Mo	Other Elements
.0130 ✓	.7300 ✓	.3470 ✓	.0270 ✓	.0280 ✓	4.690 ✓	15.29 ✓	.2900 ✓	✓ Cu=3.378 Co=.1110 ✓ N=.0310 Ti=.0020 ✓ Nb=.2700 Al=.0020 B=.0010 Sn=.0080 V=.0500 W=.0300 As=.0010 Ca=.0020 Ta=.0030 Pb=.0002

MECHANICAL VALUES

TENSILE (KSI)	YIELD (KSI)	ELONGATION (%)	REDUCTION OF AREA (%)	HARDNESS
138	123	10 ✓	64	279 HB

H900 HT CAPABILITIES 900F FOR 1 HR AIR COOL

TENSILE (KSI)	YIELD (KSI)	ELONGATION (%)	REDUCTION OF AREA (%)	HARDNESS
200	198	11	55	406 HB

ADDITIONAL REMARKS: ✓

This material meets the chemistry specifications for ASTM A564-04, RoHS COMPLIANT,
 SAE AMS 5643R. DFARS COMPLIANT.

MATERIAL IS FREE FROM MERCURY CONTAMINATION, EN10204 3.1.B
 COUNTRY OF MELT: ENGLAND

MATERIAL IS MANUFACTURED IN THE UNITED STATES OF AMERICA

I hereby certify that this data is correct as contained in the records of this company.

QUALITY CONTROL REPRESENTATIVE:
 QSD-007 REV. ORG. 4/17/2013

James R. Elliott-Quality Process Manager



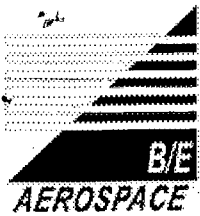
Q. C. Review
 Sig. *[Signature]*
 Date 1/7/14

Lot# 1406207

[Signature]

From: ThyssenKrupp Materials NA
 Cust. AVIBANK MFG INC
 CstAr
 Wgt.: 413 LB

Del.: 2402894815
 CstOr 729445
 Date 01/07/2014



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

Material Certification


The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO24957

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
7	10	EA	MS17984C415		314859	QRP INC.		09094	

Inv # 07/11/14


Jason Lewis
Vice President of Quality

07/11/14



QRP, Incorporated
2307 Mercantile Drive N.E.
Leland, North Carolina 28451
Phone: (910) 371-0700
Fax: (910) 371-9055

CERTIFICATE OF CONFORMANCE

Customer: B/E AEROSPACE CONSUMABLES MGT.

Customer P.O. No. ORSH34

Customer Part No./Rev. MS17984C415 REV 1

Part Name: Pin, Quick Release

QRP Part No./Rev. QRP1C0415

Quantity: 254

Job / Order No. 1475197/314859

Test Data Enclosed: YES

QAP 33.0 Clauses Apply: A, A.1, B, C, E, H, P, U, V

Compliant with DFAR 252.225.7008, 7009, 7012

<i>Part Number</i>	<i>Part Name</i>	<i>Lot Number(s)</i>
QRP1C0415 SH	SHANK	007717
QRP1C0415 SP	SPINDLE	007283
9251-04C-BR	SPRING	008081
9031-04A	BUTTON	D306390/007971
9021-04A	BUTTON HEAD	D313041/008016
5014C	RING	007944
9071.0820	BALL	008022
9072-04C	COLLAR	008057

It is hereby certified that the articles identified above are in conformance with the indicated drawings and specifications.

It is further certified that the material described above has been inspected and tested as stated or required in these specific drawings, that such specimens or samples as have been tested were taken from the lot described and that the material meets all applicable requirements.

Passivation, if required, was performed in accordance with *AMS 2700 Method 2*. Passivation was verified using the Koslow Passivation Tester 2026 and a reading of 0 to -400 was obtained. This range is correct for 17-4ph and 300 series Stainless Steel.

Appropriate test reports and or certificates are on file for your review and verification upon request. Equipment containing mercury or mercury compounds has not been used for fabrication, assembly, packaging or installation of parts or assemblies on this order.

Date: 10/25/2013

QRP, Incorporated

Prepared by P. Oxford

R. Edmonds

Quality Assurance Representative

QRP, INC.

2307 Mercantile Drive, N.E.
LELAND, NC 28451
Tel: 910-371-0700
Fax: 910-371-9055
Email: info@qrp-inc.com

PACKING LIST

SHIPPED TO:

B/E AEROSPACE CONSUMABLES MGT.

9835 NW 14TH ST
MIAMI FL 33172
USA

QRP[®]
a PEM[®] Company
www.qrp-inc.com

CUSTOMER	OUR ORDER NO.	PICK SLIP NO.	YOUR ORDER NO.	DATE PRINTED
153978	1475197	1790770	ORSH34	10/30/2013

Container I.D.	Line No.	Item Number	Customer Reference Number	Lot ID	Quantity Shipped
	1.000	QRP1C0415	MS17984C415 REV 1	314859	254
	2.000	CHEM&PHYS	N/A		1
	3.000	448322288778			0
Total for this shipment:			255		

SPECIAL INSTRUCTIONS

GOODS RECEIVED BY: _____

DATE _____

QRP Inc.
Certificate of Compliance

Subject to the provisions in our standard Terms and Conditions of Sale, we hereby confirm that with respect to the products supplied in this order, the products conform to the indicated drawings and specifications, if and to the extent that we previously agreed in writing to each applicable drawing and/or specification.

It is further certified that the material described above has been inspected and tested as stated or required in these specific drawings, that such specimens or samples as have been tested were taken from the lot described and that the material meets all applicable requirements.

Passivation, if required, was performed in accordance with ASM 2700 Method 2. Passivation was verified using the Koslow Passivation Tester 2026 and a reading of 0 to -400 was obtained. This range is correct for 17-4ph and 300 series Stainless Steel.

Appropriate test reports and/or certificates are on file for your review and verification upon request. Equipment containing mercury or mercury compounds has not been used for fabrication, assembly, packaging or installation of parts or assemblies on this order.

Authorized Quality Representative

John S. Bryant Date 10-30-13
Director of Quality, QRP, Inc.
Steve Wetzel



1108119	1117324501	090300
<p align="center">INSPECTION CERTIFICATE 3.1. MOD. MO80104 EN 10204/ CMTR Certified Material Test Report</p>		

UGITECH

Providing special steel solutions

UGITECH ITALIA S.r.l.

SEDE E STABILIMENTO
VIA G. DI VITTORIO, 34-36
20068 PESCHIERA BORROMEO (MI) ITALY
TEL. +39 02.54.743.1
FAX +39 02.547.34.83



007717 2/18/13

Prodotto Erzeugnisform Produkt Product	
Cliente e/o destinatario - Client e/ou destinataire - Besteller und/oder Empfänger Purchaser and/or Consignee PEM (CHINA) CO., LTD	No ordine cliente - Votre référence - Ihre Auftrags Nr. - Your reference PO:11/0278/CN
215300 JIANGSU PROV.CHINA	
PEM (SINGAPORE) CO.,LTD	

Qualité e specifiche tecniche - Nuance et spécifications techniques Stalsorte und Prüfbedingungen - Quality and Specifications

4542-630UGIMA J9 Round Bright Drawn Solut. Treated Pointed+Chamfer

Stato di fornitura - Etat de livraison - Lieferzustand - As delivered (1) Solut. Treated

No Conferma d'ordine Accuse de reception Auftragsbest No Acknowledgment No 110142127	Posizione No Poste Post Nr Item No 1	No lotto interno No de lot interne Interne los Nr Internal batch No 1653895 1653896	Profilo Profil Profile Shape Round	Dimensione Dimension Abmessung Size 6,3500	Tolleranza Tolerance Toleranz Tolerance J9	Lunghezza Longueur Laenge Length Fixed	Peso netto Masse Gewicht Weight 302,000 428,000
---	---	--	---	---	---	---	--

Lotto fornitore Lot producteur Lieferant los Master batch	No Colata No de coulee Schmelz Nr Heat No	Trazione - Traction - Zugversuch - Tensile test				Resilienza - Resilience - Kerbschlagzähigkeit - Notch Toughness				Durezza Durete Haerte Hardness HB		
		Lim. di snervamento Limite d'Elasticite Streckgrenze Yield Strength		Carico di rottura Resistance tract. Zugfestigkeit Tensile strength RM KSI	Allungamento Allongement Bruchdehnung Elongation % A4	Strizione Striction Bruchinschnuerung Red of Area % Z	F Type Form Type	S Seno Richt Direct	Temperatura di prova temperatura d'essai Prueftemperatur test temperature		Valori Valeurs individuelles Einzelwerte Individual values	Media Moyenne Mittelwerte Average
		0,2 % RP KSI	1 %									
	140071 140071	156		168	15	50						348

	140071 140071	C 0,0230 0,0230	SI 0,3730 0,3730	MN 0,8000 0,8000	P 0,0217 0,0217	S 0,0225 0,0225	N 0,0310 0,0310	CR 15,3390 15,3390	CU 3,0760 3,0760	MO 0,0990 0,0990	NI 4,5300 4,5300
	140071 140071	NB 0,1750 0,1750	AL 0,0020 0,0020	CO 0,0310 0,0310	ZR 0,0020 0,0020	TA 0,0100 0,0100	TI 0,0020 0,0020				

Note - Notes - Remarks - Bemerkungen

ASTM A564-04/ASTM A484-06B/ASME SA564 SEC. II ADDENDA 2007/ASTM F899-07/AMS 2315
AMS 5843R EXCEPT PARAGRAPH 3.2.1.1 / CAPABILITY-TEST / FERRITE MAX 5% / 17-4PH
CONDITION H900/ RM = 201 KSI / RP02 = 182 KSI / A4D = 14 % / Z = 47 % / HB = 427
CONDITION H1075/RM = 169 KSI / RP02 = 155 KSI / A4D = 15 % / Z = 52 % / HB = 349
Ca = 30-100 ppm / O = 70-200 ppm / Ca-O = 0,2-0,6
Microstructure contains complex oxides of lime-silico-aluminate comprising
metallurgical phases anorthite and/or pseudowollastonite
0,250 Rd - SMQ - COUNTRY OF MELT FRANCE/ EDDY CURRENT CONTROL

Controllo marcatura, visivo e dimensionale : soddisfacente. Si certifica che i prodotti sopra descritti sono conformi alle prescrizioni dell'ordine. L'analisi chimica e copia conforme a quella presente sul certificato del produttore
Contrôle de marquage, d'aspect et de dimensions satisfaisant. Nous certifions que le present document reproduit avec exactitude les données d'Resp.tcontrolloqualite. L'analyse chimique a ete relevee du certificat de la matiere premiere.
Bezeichnung/Resp.econtrolloqualiteusmessung : Ohne beanstandung. Wir bestatigen hiermit dass die obengenannten erzeugnisse den bestellunSachverständigeninsprechen. Die chemische zusammensetzung entspricht den Referenzen certifikat.

Le 15/12/13
Signature de l'inspecteur
L. DIFRANCO

007717

CERTIFICATE OF TEST



007283 (QRP 7)
16-18-12 Page 01 of 02

Certification Date
16-OCT-2012

CUSTOMER ORDER NUMBER

932360

EARLE M. JORGENSEN COMPANY
4015 WESTINGHOUSE BLVD
CHARLOTTE NC 28273

Invoice Number
T720340

CUSTOMER PART NUMBER

17-4.1250

SOLD TO: QRP INC

PO BOX 1958
LELAND NC 28451

SHIP TO:

QRP INC

2307 MERCHANTILE DRIVE NORTHEAST
LELAND NC 28451

Description: 17-4 SOL ANN CF BAR
1/8 RD X 12' R/L
HEAT: E111765

ITEM: 510493

ASTM A564
Line Total: 728 LB

Specifications:

AMS 5643
AMS 2303 E

ASTM A564 T630 04
EN 10204 3.1 B

ASME SA564 T630 04

CHEMICAL ANALYSIS

C	MN	SI	S	P	NI	CR	MO
0.013	0.71	0.395	0.025	0.022	4.69	15.54	0.11
TI	NB	AL	B	CO	CU	SN	N
0.005	0.257	0.005	0.0016	0.073	3.287	0.013	0.034
V	W	AS	CA	CBTA			
0.03	0.01	0.0090	0.0014	0.26			

007283

RCPT: R777447

MILL : TRI STAR METALS LLC

COUNTRY OF ORIGIN : ENGLAND

MECHANICAL PROPERTIES

DESCRIPTION	YLD STR KSI	ULT TEN KSI	%ELONG IN 02 IN	%RED IN AREA	HARDNESS BHN
COND A	136.0	147.0	8.0	57.0	294
DEV: H900 L	185.0	210.0	17.4	55.0	407

The above data were transcribed from the manufacturer's Certificate of Test after verification for completeness and specification requirements of the information on the certificate. All test results remain on file subject to examination.

We hereby certify that the material covered by this report will meet the applicable requirements described herein, including any specification forming a part of the description.
The willful recording of false, fictitious, or fraudulent statements in connection with test results may be punishable as a felony under federal statutes.

Material did not come in contact with mercury while in our possession.

ROSS TRAVETTO

CERTIFICATE OF TEST



007283

Page 02 of 02

Certification Date
16-OCT-2012

CUSTOMER ORDER NUMBER

932360

EARLE M. JORGENSEN COMPANY
4015 WESTINGHOUSE BLVD
CHARLOTTE NC 28273

Invoice Number
T720340

CUSTOMER PART NUMBER

17-4.1250

SOLD TO: QRP INC

PO BOX 1958
LELAND NC 28451

SHIP TO:

QRP INC

2307 MERCHANTILE DRIVE NORTHEAST
LELAND NC 28451

Description: 17-4 SOL ANN CF BAR
1/8 RD X 12' R/L
HEAT: E111765

ITEM: 510493

ASTM A564
Line Total: 728 LB

MATERIAL IS FREE FROM MERCURY CONTAMINATION
MACRO: OK
MICRO1: OK

COMMENTS

FERRITE .04%

The above data were transcribed from the manufacturer's Certificate of Test after verification for completeness and specification requirements of the information on the certificate. All test results remain on file subject to examination.

We hereby certify that the material covered by this report will meet the applicable requirements described herein, including any specification forming a part of the description.
The willful recording of false, fictitious, or fraudulent statements in connection with test results may be punishable as a felony under federal statutes.

Material did not come in contact with mercury while in our possession.

ROSS TRAVETTO

208081 9/7/13 40

MURPHY & READ SPRING



CERTIFICATE OF CONFORMANCE

Date: 9/4/13
Customer: QRP, INCORPORATED
Purchase Order Number 954768
Drawing Part Number 9251-04C-BR
9251-05C-BR

Inclusions: N/A

Exclusions: N/A

We hereby certify that all dimensions and materials used in the manufacture of these parts are in accordance with the specifications set forth in the purchase order and drawings (or samples) submitted.

Furthermore, we certify that the material used to make the above parts has not been contaminated by mercury during our manufacturing processes and normal precautions have been taken to ensure that contamination will not occur.

Signed: Alan Stehly

Print Name: ALAN STEHLY

Title: QA Manager

617 West Sixth Street, Palmyra, NJ 08065 · Phone 856-829-6887 · Fax 856-829-7244

180800

008081 7/31/13

LOT #14839-01



The Inter Wire Group

www.interwiregroup.com

355 Main Street - Armonk, NY 10504
Phone: (914) 273-6633 Fax: (914) 273-6848

Material Certification

Invoice: 1293028
Invoice Date: 8/16/2013
Our Order: 1264916
Customer PO: 1308162T
Sales Rep: JEANNE WEAVER 2

BILL TO:
MURPHY & READ SPRING MFG.
P.O. BOX 211
PALMYRA, NJ 08065

SHIP TO:
MURPHY & READ SPRING MFG.
617 WEST 6th STREET
PALMYRA, NJ 08065

Delivery No. 1035480

Ship Date: 08/16/13

Ship VIA: BEST WAY

ITEM DESCRIPTION			
Item No:	0320SSCL	Mill Name:	KOS
Customer Part No:		Country of Origin:	USA
Description:	.032 T302 S/S CL	Melt Source:	
		DFAR Compliant:	YES
		RoHS Compliant:	YES
Specification:	ASTM-A313-10 SAE-J230-94	QTY SHIP	50
		HEAT NO.	KNAX00717

Ticket Number	Qty
01100512001	50

Element	C	MN	SI	P	S	CR
Value	0.0700	1.1000	0.4200	0.0290	0.0030	18.2600

Element	NI	N
Value	8.0600	0.0780

Element	TENS STR MIN	TENS STR MAX
Value	290,100	294,100

Test	WRAP TEST	MICRO-STRUCTURE	SURFACE CONDITION	COILING TEST	MERCURY FREE
Result	Pass	Pass	Pass	Pass	Pass

The material has been inspected by the mill and conforms to the above referenced specifications.

Bruce Massey - General Manager
AUTHORIZED SIGNATURE



Buckeye Anodizing & Stamping Co.
Certificate of Conformance

8/2/13 AC
D306390

Date: 08-06-13
Customer: ORP, INC.
Customer Order No.: 847278
Buckeye Order No.: 410752

This document certifies that the items supplied by Buckeye Anodizing & Stamping Co. were processed in accordance with the specification(s) listed below and comply with the purchase order and the Buckeye Business System which is in accordance with ISO 9001:2008.

Sandra Obando

Specification: Chem. Film (Chromate Conversion) MIL-DTL-5541F Class 1A (Gold)

Gold Chromate

Quantity	Part Number	Description
100000	9031-04A	*OPID Button

D306390

007971

7/24/13 AC

ECE

APR 15 2013

BY:

Order No.:
 Packing list No.:
 Netto
 Slovenska Bistrica
 MADE IN SLOVENIA

06387800
 23738
 33626 lb
 2007-10-09

Packing list No.: 23738

Item Product description
 677714 Your order No.: P976726 574
 ALUMINIUM COLD FINISH RODS 2011 T3 - ROHS
 LIGHTLY OILED 9/32" RD X 12 FT, #547625 N-ASTM,AMS-QQA

Our order No.: 63894/8/1

We acknowledge that listed good correspond to prescribed norm
 ASTM-B211-03 AMS-QQ-A-225/3 ASTM-B211-03 EN 10204/3.1
 what is ascertained with test results:

MECHANICAL PROPERTIES

Charge	Lot	Ult.tens.str. ksi	Yield strength ksi	Elongation A50.8%	Hard.of Br. HB	Erichsen mm	Earing %	Z %	Bend test	Pos.
90635	384	48,4	44,9	10,4	92,7	-	-	-	-	1 2

BILLETS 100% US TESTED

CHEMICAL COMPOSITION

Charge	Si %	Fe %	Cu %	Mn %	Mg %	Zn %	Ti %	Pb %	Bi %	Hg %	Cd %	Al %
90635	0.1161	0.3580	5.1800	0.0223	0.0149	0.0981	0.0090	0.3467	0.5390	0.0010	0.0005	93.3054

Aluminium products are in compliance with the regulations:

- Directive 2002/95/EC (RoHS) and
- Directive 2000/53/EC (ELV).

QUALITY DIRECTOR
 Edvard Slaček

impol

Impol d.d.
 Slovenska Bistrica, Partizanska 38



007971



D313041 8/23/13 AC

Buckeye Anodizing & Stamping Co. Certificate of Conformance

Date: 08-21-13
Customer: ORP, INC.
Customer Order No. 849444
Buckeye Order No.: 417859

This document certifies that the items supplied by Buckeye Anodizing & Stamping Co. were processed in accordance with the specification(s) listed below and comply with the purchase order and the Buckeye Business System which is in accordance with ISO 9001:2008.

Sandra Obando

Specification: MIL-A-8625 Type II Class 2 - Color Anodize

Anod Black

Quantity	Part Number	Description
25000	9021-04A	*OP10 Button Head



078016

8/12/13

LOCATED AT THE FOOT OF KENNESAW MOUNTAIN
1330 OLD 41 HIGHWAY, P.O. BOX 4070 TELEPHONE (770) 427-3700
MARIETTA, GEORGIA 30060 FAX (770) 426-9369
www.torcoinc.com
AN ISO 9001/ TS-16949 CERTIFIED COMPANY

Certificate of Compliance

This is to certify the following described parts were processed and tested in compliance with the noted specifications:

QRP INC.
2307 Mercantile Drive NE
Leland NC. 28451

Customer P.O. #: 942035

Part Number: 9021-04A

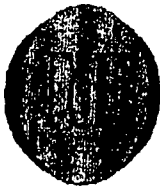
Part Name: Button Head

Quantity: 25,000 Pcs

Date 08/07/13
form 1153 07-15-99

J. M. Hill
Quality Control Manager

078016



Tri City Extrusion Inc.
PO Box 1966
Bristol, TN 37621-1966
(423)764-8931

CERTIFIED INSPECTION REPORT AND TEST RESULTS
FOR EXTRUDED PRODUCTS

008016 8/21/13 PC

OUR SALES ORDER - LINE ITEM NUMBER

25094-11

BILL TO	MANIFEST NUMBER	DIE NUMBER	DATE OF SHIPMENT
215063-O'Neal Steel - AL	39292	0368	7/16/2012
SHIP TO	CUSTOMER PO	ALLOY	TEMPER
215063AL-O'Neal Steel	2296855	6061M	T6511
	CUSTOMER PART NUMBER	DESCRIPTION	SALESMAN
	826208	7/8 Rod	TCE

CERTIFICATION

Certification Reports Required
ASTM B221-12
QQ-A-200/8
UNS A96061M

We hereby certify that the material covered by this report has been inspected in accordance with, and has been found to meet the applicable requirements described herein, including any specifications forming a part of the description, and that samples representative of the material met the composition limits and had the mechanical properties shown. These items have been produced in accordance with ASTM specifications. Items were manufactured in the USA and conform to QQ-A specifications.

Mechanical Properties

Lot/Heat	Cast Number	Alloy	Test No.	Test Date	Ultimate Tensile Strength (KSI)	Yield Strength (KSI)	Percent Elongation	Hardness	Conductivity
25094-11	37789	6061M	25094	07/16/12	49.5	42.5	14%	16	

Chemical Composition

Cast Number	Alloy	Process	Lot/Heat	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Ga	V	B	Zr	Bi	Pb	Sn	Sr	Co	Al	Other
37789	6061M	1.67	25094-11	0.73	0.30	0.28	0.05	0.94	0.06	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Authorized By:

David Yates

PAGE 10

7/8/13
ac

00794-44

MURPHY & READ SPRING



CERTIFICATE OF CONFORMANCE

Date: 7/2/13
Customer: QRP, INCORPORATED
Purchase Order Number 949883
Drawing Part Number 5014C (RING)

Inclusions: DFARS COMPLIANT

Exclusions: N/A

We hereby certify that all dimensions and materials used in the manufacture of these parts are in accordance with the specifications set forth in the purchase order and drawings (or samples) submitted.

Furthermore, we certify that the material used to make the above parts has not been contaminated by mercury during our manufacturing processes and normal precautions have been taken to ensure that contamination will not occur.

Signed: Alan Stehly

Print Name: ALAN STEHLY

Title: QA Manager

617 West Sixth Street, Palmyra, NJ 08065 · Phone 856-829-6887 · Fax 856-829-7244

00794-44

007944
207944
LOT #4771-01
7/8/13

Page 2 007944

7/8/13

IWP
The Inter Wire Group
www.interwiregroup.com
355 Main Street - Armonk, NY 10504
Phone: (914) 273-6633 Fax: (914) 273-6848

Material Certification

Invoice: 1292109
Invoice Date: 6/24/2013
Our Order: 1264065
Customer PO: 1306212T
Sales Rep: JEANNE WEAVER 2

BILL TO:
MURPHY & READ SPRING MFG.
P.O. BOX 211
PALMYRA, NJ 08065

SHIP TO:
MURPHY & READ SPRING MFG.
617 WEST 6th STREET
PALMYRA, NJ 08065

Delivery No. 1034675

Ship Date: 06/24/13

Ship VIA: BEST WAY

ITEM DESCRIPTION			
Item No:	0850SSCL	Mill Name:	TECIL
Customer Part No:		Country of Origin:	USA
Description:	.085 T302 S/S CL	Melt Source:	NORTH AMERICA
		DFAR Compliant:	YES
		RoHS Compliant:	YES
Specification:	ASTM-A313-10 SAE-J230-94	QTY SHIP	651
		HEAT NO.	F5R9

Ticket Number	Qty
01052313004	651

Chemical Properties						
Element	C	MN	SI	P	S	CR
Value	0.0660	0.5800	0.2800	0.0320	0.0012	18.3700

Element	NI	N
Value	8.0300	0.0540

Mechanical Properties		
Element	TENS STR MIN PSI	TENS STR MAX PSI
Value	265,000	271,000

Test Results					
Test	WRAP TEST	MICRO-STRUCTURE	SURFACE CONDITION	COILING TEST	MERCURY FREE
Result	Pass	Pass	Pass	Pass	Pass

The material has been inspected by the mill and conforms to the above referenced specifications.

Bruce Massey

BRUCE MASSEY - GENERAL MANAGER
AUTHORIZED SIGNATURE



1901 N. Narragansett Ave. • Chicago, Illinois 60639
773/804.0404 • Fax 773/804.0408
www.industeel.com
An ISO 9001 Certified Company

LOT #14622-01

Page
007944 - 3
7/8/13 AC

02/13/13

ISW Order/Invoice Number: 147985-00

SOLD TO: M9282
MURPHY & READ SPRING
P.O. BOX 211
615 W. 6th Street
Palmyra NJ 08065

SHIP TO: M9282
MURPHY & READ SPRING
615 W. 6th Street
Palmyra NJ 08065

CUSTOMER PO: 1302132T

0850SSBT

.0850"302 STAINLESS WIRE N/M CNT CLS

WEIGHT: 785

HEAT NUMBER: D8A7

CHEMISTRIES

C	Mn	P	S	Si	Cr	Ni	N
.069	1.240	.030	.001	.340	18.130	8.060	.073
Mo	Cu						
.230	.350						

PHYSICAL PROPERTIES

TENSILE: 264263 266635

TORSIONS:

ROCKWELL #1:
ROCKWELL #2:

BENDS:
SALT SPRAY HOURS:
COATING WEIGHT:
GRAIN SIZE:

YIELD STRENGTH: 000000/000000

ELONGATION:

REDUCTION OF AREA:

**** MERCURY FREE ****

*** SPECIFICATIONS ***

ASTM A313-10

AMS 5688-L

SAE J230-94

TARIFF: 7223.00

NAFTA: B

MELT: US UNITED STATES

ORIG: US UNITED STATES

MILL: SIRI WIRE COMPANY

DFAR: Y

ROHS: Y


Rey Domingo, Quality Control Manager

The values and specifications herein are passed through from the manufacturer directly to the customer.
Please see reverse side or www.industeel.com for all Terms and Conditions of Sale
Material Properties Sheet 70403 MPS Version 1 Approved by BE 11/20/12

**AMSTEK
METAL**

LOT #14394-01

CERTIFIED TEST REPORT

SOLD TO: MURPHY & READ SPRING MFG. CO. DATE: 6/26/12
 SHIP TO: MURPHY & READ SPRING MFG.
 617 W. SIXTH ST
 PALMYRA, NJ 08065-2492
 GRADE: 302TK

Cust. P/O#: 1206261TPart No.: .085SS
 SPEC ASTM A313
 SIZE: .085
 DESCR: T302 NON-METALIC SPG CONT COIL
 DFARS COMPLIANT
 DATE SHPPD: 6/26/12
 QUAN SHPPD: 720

Bill/Ladng 053341
 Sales Ord: 148193 01

CHEMICAL ANALYSIS

TRACE# 97804

C : .0690
 Si : .3700
 Cu : .4400

Mn: 1.1200

Mill Heat# KNAX00580

P : .0350
 Cr: 18.030

S : .0016
 Mo: .3100

N : .0710

Ni: 8.0200

PHYSICAL PROPERTIES

Tensile: 250/252 KSI

Spec ASTM A313; AMS 5688
 Mill Name KOSWIRE, INC.
 Misc Info ASTM A313; AMS 5688
 ActualDiam .0850
 MillReqTst CAST HELIX-GOOD; WRAP/COIL-GOOD

MATERIAL IS MERCURY FREE AND RoHS COMPLIANT

WE HEREBY CERTIFY THE ABOVE FIGURES ARE ACCURATELY STATED, MEET YOUR
 REQUIREMENTS AND ARE 100% TRACEABLE IN OUR RECORDS.

Just Boh
 QA REPRESENTATIVE - FARMINGTON



QC8922 8/15/13ac
The Miniature Ball Specialist

163 Greenwoods Road West
P.O. Box 585
Norfolk, CT 06058-0585 USA

Tel (860) 542-5543
Fax (860) 542-5058
E-mail balls@nemb.com

Name: QRP, Inc.
Address: 2307 Mercantile Drive N.E., Leland, NC 28451
Number: S1099
Date: May 2, 2013

CERTIFICATE OF COMPLIANCE

We certify that the balls supplied against this order comply with your specification.

We further certify that a chemical analysis is available at our plant for inspection.

Purchase Order # 945443

Quantity	Diameter	Material	Grade	Batch No.	Heat No.	Part No.
9,130	.082000"	440-C	200	2302.1	12012000134	9071.0820
7,120		"	"	2302.2	"	"
49,630		"	"	2730.1	G16861R09	"
54,830		"	"	2730.2	"	"

270800

Raw material certs attached
Passivated

New England Miniature Ball Corp

Signature of Responsible Officer

Name: Doug Brand

Title: Quality Manager

008022 8/15/13K



大连保税区特钢制品厂
Dalian F.T.Z Special Steel Product Factory

产品质量证明书
INSPECTION CERTIFICATE

合同号 (Contract No.) 012-073
生产号 (Production No.) 012-3-100

订货单位 (Purchaser) 上海宝钢集团
证明书号 (Certificate No.) 012-177
签发日期 (Date of Issue) 2012.11.23

产品名称 Product Name	生产日期 Production Date			炉号 Heat No	钢号 Steel Grade	产品规格 (mm) Product Specification		等级 Grade	重量 (Kg) Weight	件数 Number of Packages	技术要求 Technical Conditions	交货状态 Delivery Status					
	Year	Month	Day			尺寸 Dimension	公差 Tolerance					冷轧 Cold-drawn	热轧 Light-drawn	退火 Anneal	调质 Polish		
	012	3	30	D01200134	440C	1.7	+0.03		2144	145	16706-17						

化学成分含量 (Chemical Composition Content)																			
C	Si	Mn	P	S	Cr	Ni	Mo	W	V	Ti	Al	B	Co	Nb	(Hppm)	(Kppm)	(Kppm)	Ph	Se
0.010	0.039	0.220	0.0023	0.0018	17.55	0.22	0.080												0.04

机械性能 (Mechanical Properties)										非金属夹杂物 (Non-metallic Inclusions)									
抗拉强度 Tensile Strength	屈服强度 Yield Strength	伸长率 Elongation at Break	断面收缩率 Reduction of Area	冲击功 Impact Energy	硬度 Hardness	疲劳强度 Fatigue Strength	蠕变 Creep	松弛 Relaxation	低温韧性 Low Temp Toughness	1A	2B	2A	2B	3A	3B	4A	4B	5A	5B
										细 fine	粗 coarse	细 fine	粗 coarse	细 fine	粗 coarse	细 fine	粗 coarse	细 fine	粗 coarse
710 Pa										A									
										B									
										C									
										D									

显微组织 (Microstructure)					非金属夹杂物 (Non-metallic Inclusions)				
脱碳层 Decarburized Layer	球化组织 Spheroidized Structure	碳化物分布 Heterogeneity of Carbide	碳化物粒度 Carbide Granularity	晶粒 Grain Structure	带状组织 Banded Structure	氧化物 Oxide	硫化物 Sulfide	碳化物 Carbide	氮化物 Nitride
0	1.0	1.0				0.5	0.5		

1. 本厂生产的ISO9001:2008质量管理体系认证证书。
2. 关于铜含量的测定, 本厂按照GB/T 223.59-2002标准进行测定, 结果符合标准要求。
3. 如有异议, 请向本厂质量管理部门联系。

1. Our corporation has passed ISO9001:2008 international quality management system certification.
2. Concerning copper content in the relative standard, our factory run strictly up to the standard GB/T 223.59-2002 and won't fill the results.
3. If you have question please write letter to us and give grade of steel, heat number, specification, weight, contract number, certificate number.

电话 (TEL) : 86-411-87305178 X7393066

传真 (FAX) : 86-411-87305091

地址 (Center) :

012-177

SUPERIOR WASHER AND GASKET CORP.

170 Adams Avenue
Hauppauge, New York 11788
Phone: (631) 273-8282
Fax: (631) 273-8088
E-Mail: swg@superiorwasher.com
Web: superiorwasher.com
(In the East)

SUPERIOR WASHER AND GASKET CORP.

662 Bryant Blvd.
Rock Hill, South Carolina 29732
Phone: (803) 366-3250
Fax: (803) 366-3511
E-Mail: swg@superiorwasher.com
Web: superiorwasher.com
(In the South)

BULK FASTENERS, INC.
P.O. BOX 158

CASTLE HAYNE, NC 28429

Customer Purchase Order Number		Superior Order Number	Superior Lot Number	Tracer No.
3024AC		C132085-1	C132085 - 1	SC33150 -5 /61764
Date	Production Card	Part Number	Quantity	
05-21-13	509850	9072-04C	63,200	
Drawing		Dual Cert No.		
B/P REV D-EXC				

We hereby certify that all materials and processes conform
to the required drawing specifications and that the parts
have been melted and manufactured in the U.S.A.
and comply with DFARS 252.225.7014 ALT 1
All parts are manufactured in a Mercury-free environment

Material

302 STAINLESS STEEL Annealed per ASTM A240

Chemical Analysis

C	CARBON	.0380
Mn	MANGANESE	1.2200
P	PHOSPHORUS	.0280
S	SULPHUR	.0025
Si	SILICON	.3800
Cr	CHROMIUM	18.1500
Ni	NICKEL	8.0400
Mo	MOLYBDENUM	.1800
Cu	COPPER	.2000
Fe	IRON	
Ti	TITANIUM	
Co	COBALT	
N	NITROGEN	.0530
Cb	COLUMBIUM	
Al	ALUMINUM	
Sn	TIN	
Mg	MAGNESIUM	
Zn	ZINC	
Pb	LEAD	
Va	VANADIUM	

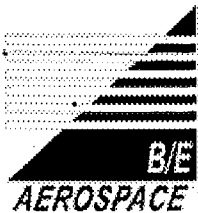
Mechanical Properties

Yield	39014
Tensile	91515
Elongation	61.2
Hardness	B 82.0
Heat	350297
Magnetic	
Permeability	
Bend Test	

SUPERIOR WASHER & GASKET CORP.

By *Richard Anderson Jr.*
Richard Anderson, Jr.
Quality Control Manager

005057



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO24957

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
4	24	EA	MS21250-06022		316653	3V FASTENERS	1ER65		


Jason Lewis
Vice President of Quality

07/11/14



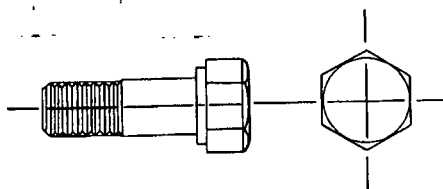
3V® FASTENERS

PRECISION AEROSPACE FASTENERS

a **CAM** Company

320 Reed Circle • Corona, CA 92879

Tel: 951-734-4391 • FAX: 951-734-9488



TEST CERTIFICATION

Cert # : 64967 Cert Date: 03/21/13 LOT #: 316653 Page: 1
 MFG DATE: 9-6-13
 Cust # : 141327 P.O. #: ORKH90
 Customer : B/E AEROSPACE P.O. Qty: 5000
 Ship To : MIAMI, FL Ship #: 1879123
 Ship Qty: 5000
 Part #: MS21250-06022 MFG. Part #: NASM21250-06022 REV.1
 Material Spec: AMS6322N Heat #: 10175090
 Type: 8740 Mill, Vendor: CHARTER STEEL / WIRETECH
 Code: 14207 Procure Spec: NASM8831 REV.4

Shear per NASM1312-13 or -20
 Minimum Requirement: 23900 LBS

Load	Load	Load	Load	Load
---	---	---	---	---
24885	24973	25026	25412	24990
24990	24738	24779	25216	25276

Hardness per NASM1312-6, ASTM E 18 or E 384
 Minimum Requirement: 39-43 HRC

41.0	41.0	41.0	41.0	42.0
42.0	42.0	42.0	42.0	42.0
42.0	42.0	42.0	42.0	43.0

Metallurgical Tests
 Hardness: N/A

Grain Size: N/A Decarb: NONE

Metallurgical, Special Process and Subcontracted Test Information
 THREADS INSPECTED PER MIL-S-8879C N.3. AS8879D OR MIL-S-7742D
 MACRO AND MICROSTRUCTURE SATISFACTORY 3 PCS
 HEAT TREAT PER AMS2759/1E BY QUALITY HEAT TREAT #134831
 CAD PER AMS-QQ-P-416C TYII CL.2 BY ACTIVE #136279
 100% MAG PER ASTM E 1444/E1444M-12 BY ACTIVE #136571
 HYDROGEN EMBRITTLEMENT PER NASM 1312-5 REV.1 BY ATLAS #108579

Fatigue Life per NASM1312-11
 Minimum Requirement: 6500

Average Cycles: 109304

Cycles :	84089	90432	130000	114070	102866
Failure:	THD	THD	NONE	THD	THD
Cycles :	130000	130000	96275	96824	130000
Failure:	NONE	NONE	THD	THD	NONE
Cycles :	130000	130000	75376	90324	0
Failure:	NONE	NONE	THD	THD	

B/E Aerospace, Inc. - Consumables Management
Self Release

3V
LAB
05

Signature and Stamp
Date: 3/21/13

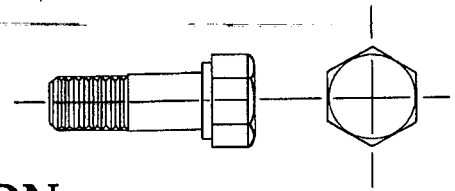
**3V® FASTENERS**

PRECISION AEROSPACE FASTENERS

a **CAM™** Company

320 Reed Circle • Corona, CA 92879

Tel: 951-734-4391 • FAX: 951-734-9488

**TEST CERTIFICATION**

Page: 2

Customer: B/E AEROSPACE

LOT #: 316653

Cert #: 64967

Tensile per NASM1312-8

Minimum Requirement: 17100 LBS

Load :	20149	20097	20318	20453	20210
Failure:	THD	THD	THD	THD	THD
Load :	20148	20253	20254	20335	19989
Failure:	THD	THD	THD	THD	THD

THIS TEST CERTIFICATION SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF 3V FASTENERS CO., INC. TESTING LABORATORY. THIS CERTIFICATION SHALL NOT BE USED BY THE CUSTOMER TO CLAIM PRODUCT ENDORSEMENT BY ANY AGENCY OF THE U.S. GOVERNMENT. 3V FASTENERS CERTIFIES THAT THE PRODUCT SHIPPED ON ABOVE PURCHASE ORDER WERE MANUFACTURED, INSPECTED AND TESTED IN COMPLIANCE WITH ALL APPLICABLE PRINTS AND SPECIFICATIONS. ALL SUPPORTING DOCUMENTATION IS ON FILE AT 3V. ACCREDITED TO AS9100C, ACCREDITED ISO 9001:2008. TRC CERTIFICATE NUMBER: TRC 00717, CAGE CODE 1ER65, COO:USA BAE APPROVAL BAE/AG/30148/CAL, AIRBUS APPROVAL 30085. THE RAW MATERIAL USED TO MANUFACTURE THESE PARTS WAS MELTED IN THE USA OR A QUALIFYING COUNTRY AND COMPLIES WITH THE APPLICABLE SECTIONS OF DFARS 252-225.

QUALITY ASSURANCE LAB SUPERVISOR


ROBERT CANTILLO**B/E Aerospace, Inc. - Consumables Management**
Self ReleaseSignature and Stamp: Date: 3/21/14
3V
LAB
05

3V FASTENERS CO., INC.

FINAL INSPECTION REPORT

PG 1 OF 2

PART NUMBER	REV.	LOT #	LOT SIZE	SAMPLE SIZE
MS21250-06022	1	316653	9904	50/29/22

DESC: BOLT TEN EXT WRENCH 12PT	PRINT NUMBER	SAMPLING PLAN
FLANGED 3/8-24 X 2.020	NASM21250	NASM8831 TBL XII, S-3

PRINT CHARACTERISTIC	PRINT REQ.	ACTUAL	ACC.	REJ.	GAGE EQUIPMENT
HEAD MARKING	MS21250 LOGO	MS21250 LOGO	✓		VISUAL/10X
GRIP LENGTH +- .010	1.385-1.365	1.372-1.371	✓		CALIPER/OPT.COMP.
LENGTH +- .010	2.030-2.010	2.027-2.011	✓		CALIPER
THREAD PITCH DIA.	.3479-.3450	.3469-.3457	✓		TRI-ROLL
THREAD FUN. DIA.	.3479-.3450	.3479-.3470	✓		TRI-ROLL/RING GAGE
THREAD MAJOR DIA.	.3725-.3678	.3701-.3689	✓		MICROMETER
THREAD ROOT RADIUS	.0075-.0063	.2268-.2265	✓		OPTICAL COMPARATOR
THREAD MINOR DIA.	.3268-.3214	.3232-.3218	✓		TRI-ROLL/OPT.COMP.
B GRIP DIAMETER	.3745-.3735	.3743-.3736	✓		MICROMETER/OPT COMP
A COLLAR DIA.	.649-.639	.649-.640	✓		CALIPER
Q LAND THICKNESS	.101-.081	.090-.086	✓		OPTICAL COMPARATOR
COLLAR ANGLE	47-43 DEG.	46-45 DEG	✓		OPTICAL COMPARATOR
R RADIUS UNDER HEAD	.057-.047	.048	✓		OPTICAL COMPARATOR
H HEAD HEIGHT	.398-.378	.397-.392	✓		CALIPER/MICROMETER
WRENCH POINT DIA.	.5049-.4900	.5030-.4970	✓		CALIPER
WRENCH FLAT DIA.	.4370-.4320	.4360-.4340	✓		CALIPER/MICROMETER
CHAMFER TOP OF HEAD	32-28 DEG TO .437-.422	32 DEG TO .437-.433	✓		OPTICAL COMPARATOR
FIN THD, B/S, RAD, GRIP	32/RA MAX.	<32RA	✓		COMPARATOR GAGE/10X
FIN. ALL OTHERS	125/RA MAX.	<125RA	✓		COMPARATOR GAGE/10X
BURRS/SHARP EDGES	.016-.003	.016-.003	✓		VISUAL/10X
BEARING SURF. SQ.	90 +.5-.0 DEG	90 +.5-.0	✓		OPTICAL COMPARATOR
SHANK STRAIGHTNESS *	.0025	<.0025	✓		CONCE. GAGE/SUR. PLT.

INSP. PERFORMED &
ACCEPTED BY:3V
INSP
11

DATE: February 12, 2014

REPORT PREPARED BY: ROBERT CANTILLO

3
DATE: February 10, 2014 316653

FORM 11-1, REV 5 03/17/98

NOTES: MFG DATE: 9-6-13

1. * PER INCH OF LENGTH

"Sample (s): Customer Supplied"

TEST REPORT

108579

3V
LAB
05



ATLAS TESTING LABORATORIES, INC.

9820 6th Street, Rancho Cucamonga, CA 91730

909-373-4130

FAX 909-373-4132

TG 2

PO# 108579

DATE: 02/04/14
ATL# 428698

CLIENT: 3V FASTENERS
ATTN: NICOLE MATTHESON
320 REED CIRCLE
CORONA, CA 92879-1349

PN# MS21250-06022
ROUTER# 316653
LOT QTY: 10,013
QTY: 5 PCS.

ALLOY: 8740

SPEC: NASM 21250 REV. NEW. NASM 8831 REV. 4

HYDROGEN EMBRITTLEMENT TEST: (METHOD - NASM 1312-5 REV.1 & AMS-QQ-P-416C)

Test Temperature:	Room Temperature
Type of Specimen	Fastener
Specimen Size (in):	.3750
Load (lbs):	14,535 lbs
Pan Load (lever arm ratio 20 to 1):	726.8 lbs.
Test Duration:	23.1 hrs.
Results:	No Failure / Test Discontinued
Number of samples tested:	Five (5)
Minimum Requirements:	Stress 85% of 17,100 lbs. for 23.0 hrs. (14,535 lbs.)

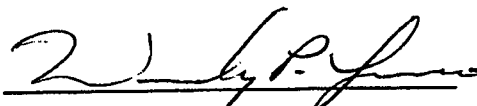
ATE# 905-A

MAGNETIC PARTICLE INSPECTION: (METHOD - ASTM-E1444/12)

Five (5) samples tested all Satisfactory

Remarks: Conforms to requirements.

Respectfully Submitted:

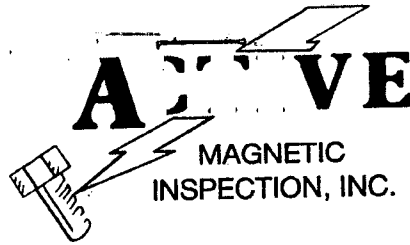


Wendy P. Franco, Quality Assurance

Date:

2/4/14

ATLAS TESTING SUBMITS THIS REPORT AS THE CONFIDENTIAL PROPERTY OF OUR CLIENT. REPRODUCTION IS AUTHORIZED, BUT ONLY IF IN FULL. THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT INFORMATION TO THIS REPORT MAY BE PUNISHABLE UNDER FEDERAL LAW.



583321
136571
2-11-14

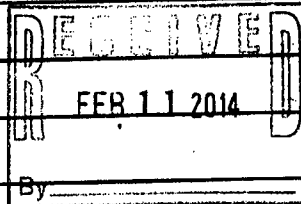
9356 1/2 San Fernando Road, Unit B • Sun Valley, CA 91352
(818) 504-0677 • FAX (818) 504-1559

SOLD TO: 3V FASTENERS
320 REED CIRCLE
CORONA, CA 92879
(951) 734-4391

TERMS: net 30

DATE CERTIFIED:	DATE RECEIVED:	DATE TESTED:	CUSTOMER P.O.	PACKAGING METHOD
02-10-2014	01-30-2014	02-10-2014	136571/00869215	17 Pan

9904 820# MS21250-06022 MAG
3/8-24 X 2.020 12 POINT BOLT R/N# 316653



MATERIAL / HEAT TREAT / STATUS OF PART: 8740/FINAL

TOTAL

PASSIVATE

Other

MAGNETIC SPECIFICATIONS
ASTM-E-1444/E1444M-12

Acceptance Criteria		Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected
9904		0											

Reason Rejected

FLUORESCENT PENETRANT SPECIFICATIONS

Acceptance Criteria		Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected

Reason Rejected

QC NDT Level 2: REYES HERNANDEZ

This test certification shall not be reproduced except in full. This certification shall not be used by the customer to claim product endorsement by any agency of the U.S. government. Active Magnetic Inspection certifies that the product shipped on the above certification were processed, inspection & tested in compliance with all applicable prints & specifications. All supporting documentation is on file at Active Magnetic Inspection.

CERTIFICATION / TEST / REPORT

582739



TERMS: net 30

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CERTIFICATION / TEST / REPORT



WireTech, Inc.

6440 E. Canning Street
Los Angeles, CA 90040
Phone (323) 722-4933
Fax (323) 721-2738

SOLD TO

3V Fasteners
320 Reed Circle
Corona, CA 92879-1349
USA



WORK ORDER
100738

7-27-13

CERTIFICATION

HEAT NO. 10175090

SALES ORDER / RLS 850767 / 1

ISO 9001-2000 REGISTERED



MECHANICAL TESTING
CERT # 911.01

CERT# 911.01

CUSTOMER P.O. 107050	CUSTOMER PART 4980-5000 8740	QUANTITY 2,091 Lbs	CARRIERS 2	LADING NO 00105081	SHIPMENT DATE 07/26/2013			
SPECIFICATION T338740-104990A A-8740, AQ, SKFG, CHQ WIRE, SEAM & DECARB FREE, SAIP Zinc Phosphate, Lime & Stearate Coating, Size:0.498/0.500 Specifications: AMS 2301K, AMS6322N, MIL-S-6049A,AMEND. 1, AMS-S-6049-A								
CERTIFICATION REQUIREMENTS								
Chemical Properties								
C / .40	Si / .27	Mn / .86	P / .01	S / .006	Cu / .1	Ni / .44	Cr / .55	Mo / .21
Physical Properties								
Grain Size	Jominy 1	Jominy 2	Jominy 3	Inclusions Macro	Cleanliness	Mill Source		
6 J5=55	J8=48	J10=46	S2-R1-C2	GOOD	F&S=0	Charter		
Country of Origin USA - DFAR Compliant								
Mechanical Properties								
TEST	UNITS						Results	
Tensile Strength	KSI	6.6	1-116	1-226	5-232	85.0		
Yield Strength	KSI	7-27-13	2-174	2-249	6-215	72.3		
% Elongation	%		3-185	3-236	7-238	31		
% Reduction of Area	%		4-177	4-245	8-267	72.9		
Rockwell Hardness B Scale	HRB (s)		5-192	9-183		87		
Decarb (Total)	In					0.00		
						2091 Lbs		

Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days time after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material cut to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47.

REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL

Wire Tech, Inc. metallurgical laboratory is accredited in the following test: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 1077, IFI 140, inclusion rating per ASTM E 45, decarburization performed as per IFI 140.

The reported Chemical and Physical Properties are Melt Source results. Transcribed from mill certificates. HRB(W) are hardness results performed with a 1/16" carbide ball. Unless otherwise specified, HRB and HRC results are conversions from ASTM A370 tables 1 and 2. *Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontractor laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA accreditation.

TEST RESULTS RELATE ONLY TO THE ITEMS TESTED.

DFAR Material per Clauses 252.225-7014 ALT. 1, 252.225-7009, & 225.003(9)

"LATEST REVISIONS OF ASTM"

Material is free of mercury, radium, or alpha contamination.



CHARTER STEEL

A Division of
Charter Manufacturing Company, Inc.

EMAIL



14207
1658 Cold Springs Road
Saukville, Wisconsin 53080
(262) 268-2400
1-800-437-8789
FAX (262) 268-2570

CHARTER STEEL TEST REPORT Reverse Has Text And Codes

Wiretech Incorporated
6440 East Canning Street
Attn: Andre Stephan
Los Angeles, CA-90040

Cust. P.O.	6774-5
Customer Part #	8740C1A170-C
Charter Sales Order	70028555
Heat #	10175090
Ship Lot #	4121247
Grade	8740 R SK FG AQ 43/64
Process	HRSA
Finish Size	43/64

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and on the reverse side, and that it satisfies these requirements.

Test Results of Heat Lot# 10175090

Lab Code: 7388	C	MN	P	S	SI	NI	CR	MO	CU	SN	V
CHEM	.40	.86	.010	.006	.27	.44	.55	.21	.10	.008	.001
%Wt											
	AL	N	B	TI	NB						
	.024	.0060	.0001	.001	.002						
JOMINY(HRC)	JOM01	JOM02	JOM03	JOM04	JOM05	JOM06	JOM07	JOM08	JOM09	JOM10	JOM12
	56	56	56	56	55	52	50	48	47	46	43
	JOM14	JOM16	JOM18	JOM20	JOM24	JOM28	JOM32				
	41	38	37	36	34	32	31				

JOMINY SAMPLE TYPE ENGLISH = C
MACRO ETCH SURFACE = 1 MACRO ETCH RANDOM = 1 MACRO ETCH CENTER = 1
AMS 2301 FREQUENCY AVERAGE = .00 AMS 2301 FREQUENCY INDIVIDUAL = .00
AMS 2301 SEVERITY AVERAGE = .00 AMS 2301 SEVERITY INDIVIDUAL = .00
CHEM. DEVIATION EXT.-GREEN =

Test Results of Rolling Lot# 1059027

REDUCTION RATIO = 85:1

Test Results of Processing Lot# 4121183, 4121247

	# of Tests	Min Value	Max Value	Mean Value	
TENSILE	2.0	83.2	83.3	83.2	TENSILE LAB = 0358-02
REDUCTION OF AREA	2	64	66	65	RA LAB = 0358-02
ROCKWELL B	2	83	83	83	RB LAB = 0358-02

NUM DECARB = 2 FREE FERRITE DECARB = .000 FREE FERR & PARTIAL DECARB = .003
CP SPHERO % LAB = 0358-02 NUM SPHERO = 2 SPHERODIZATION = 83.8

Specifications:

Manufactured per Charter Steel Quality Manual Rev 9,08-01-09

Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:
Customer Document = AMS6322N/AMS2301K/COP3010M/BS2S147:1976 CHEM ONLY Revision = Dated =

Additional Comments:

Charter Steel
Saukville, WI, USA



Page 1 of 1

This MTR supersedes all previously dated MTRs for this order

Janice Barnard
Janice Barnard
Manager of Quality Assurance
02/14/2012

Rem: Load1,Fax0,Mail0

14207

The following statements are applicable to the material described on the front of this Test Report:

1. Except as noted, the steel supplied for this order was melted, rolled, and processed in the United States meeting DFAR's compliance.
2. Mercury was not used during the manufacture of this product, nor was the steel contaminated with mercury during processing.
3. Unless directed by the customer, there are no welds in any of the coils produced for this order.
4. The laboratory that generated the analytical or test results can be identified by the following key:



Certificate Number	Lab Code	Laboratory		Address
0358-01	7388	CSSM	Charter Steel Melting Division	1653 Cold Springs Road, Saukville, WI 53080
0358-02	8171	CSSR/CSSP	Charter Steel Rolling/Processing Division	1658 Cold Springs Road, Saukville, WI 53080
0358-03	123633	CSFP	Charter Steel Ohio Processing Division	6255 US Highway 23, Risingsun, OH 43457
0358-04	125544	CSCM/CSCR	Charter Steel Cleveland	4300 E. 49th St., Cuyahoga Heights, OH 44125-1004
.	.	--	Subcontracted test performed by laboratory not in Charter Steel system	

5. When run by a Charter Steel laboratory, the following tests were performed according to the latest revisions of the specifications listed below, as noted in the Charter Steel Laboratory Quality Manual:

Test	Specification	CSSM	CSSR/CSSP	CSFP	CSCM/CSCR
Chemistry Analysis	ASTM E415; ASTM E1019	X			X
Macroetch	ASTM E381	X			X
Hardenability (Jominy)	ASTM A255; SAE J406; JIS G0561	X			X
Grain Size	ASTM E112	X	X	X	X
Tensile Test	ASTM E8; ASTM A370		X	X	X
Rockwell Hardness	ASTM E18; ASTM A370	X	X	X	X
Microstructure (spheroidization)	ASTM A892		X	X	
Inclusion Content (Methods A, E)	ASTM E45		X		X
Decarburization	ASTM E1077		X	X	X

Charter Steel has been accredited to perform all of the above tests by the American Association for Laboratory Accreditation (A2LA). These accreditations expire 01/31/13.

All other test results associated with a Charter Steel laboratory that appear on the front of this report, if any, were performed according to documented procedures developed by Charter Steel and are not accredited by A2LA.

6. The test results on the front of this report are the true values measured on the samples taken from the production lot. They do not apply to any other sample.
7. This test report cannot be reproduced or distributed except in full without the written permission of Charter Steel. The primary customer whose name and address appear on the front of this form may reproduce this test report subject to the following restrictions:
 - It may be distributed only to their customers
 - Both sides of all pages must be reproduced in full
8. This certification is given subject to the terms and conditions of sale provided in Charter Steel's acknowledgement (designated by our Sales Order number) to the customer's purchase order. Both order numbers appear on the front page of this Report.
9. Where the customer has provided a specification, the results on the front of this test report conform to that specification unless otherwise noted on this test report.





B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO24957

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
3	100	EA	MS21043-5		47616	ALCOA FASTENING/REPU	52828		


Jason Lewis
Vice President of Quality

07/11/14


CERTIFICATE OF TEST

WE HEREBY CERTIFY THAT ALL MATERIALS USED IN THE MANUFACTURE OF PARTS COVERED BY THE REPORT CONFORM TO THE MATERIAL SPECIFICATIONS CALLED FOR BY THE PURCHASE ORDER. WE FURTHER CERTIFY THAT THE PARTS ARE MANUFACTURED IN ACCORDANCE WITH APPLICABLE DRAWINGS OR SPECIFICATIONS CURRENT ON THE DATE OF MANUFACTURE. TEST REPORTS COVERING MATERIALS IN THESE PARTS AND INDICATING CONFORMANCE WITH APPLICABLE SPECIFICATIONS ARE ON FILE AND SUBJECT TO EXAMINATION. PARTS AS SHIPPED HAVE NEVER BEEN IN CONTACT WITH MERCURY. **THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF THE LABORATORY.**

PARTS MANUFACTURED IN: ☐ U.S.A. ☒ MEXICO
AFS IS IN COMPLIANCE WITH DFAR 252.225.7009

Deefina Martinez
Signature of Quality Assurance Representative

6-30-14
Date

P.O. No: 0NLL76

Item No: MS21043-5 REV.3

Quantity
Ordered: 84,745

Date Cert
Ordered: 6-30-14

Customer: B/E AEROSPACE
CONSUMABLES

ID No.: 47616

Description: HEX NUT

Procurement
Spec.: NASM25027

Also Certified
To: NAS1291C5 REV.14

Additional
Info: RH30C5

Date of
Manufacture: 5-30-14

Notice to Subsequent Purchaser or Repacker.
These articles are imported. The requirements of 19 U.S.C. 1304 & CFR part 134 provide that the articles or their containers must be marked in a conspicuous place as legibly, indelibly & permanently as the nature of the article or container will permit, in such a manner as to indicate to an ultimate purchaser in the United States, the English name of the country of origin of the article.

IF APPLICABLE, CHECK ON BELOW.

☐ **FAA CERTIFICATION (PMA):** IT IS HEREBY CERTIFIED THAT (A) THE PARTS AND/OR MATERIALS REFLECTED HERE-IN WERE PRODUCED UNDER FEDERAL AVIATION ADMINISTRATION APPROVED MANUFACTURING AND QUALITY CONTROL SYSTEMS/METHODS AS SET FORTH IN FEDERAL AVIATION REGULATION, PART 21, SUB-PART K, PARAGRAPH 21.303 AND (B) ALL PARTS AND/OR MATERIALS ARE CERTIFIED NEW, CONFORMS TO THE DESIGN DATA AND ARE IN AIR WORTHY CONDITION.

Signature of Quality Assurance Representative








Date

☒ **TSO-C148 STATEMENT:** THE PARTS CONTAINED IN THIS SHIPMENT HAVE BEEN MANUFACTURED AND INSPECTED IN ACCORDANCE WITH TSO-C148. THE CONDITIONS AND TESTS REQUIRED FOR TSO APPROVAL OF THIS ARTICLE ARE MINIMUM PERFORMANCE STANDARDS. AIRCRAFT FASTENERS APPROVED UNDER THIS TSO ARE NOT NECESSARILY INTERCHANGEABLE WITH OTHER AIRCRAFT FASTENERS APPROVED UNDER THIS TSO. FASTENERS OF SIMILAR DIMENSIONAL PROPERTIES MAY HAVE WIDELY VARYING PERFORMANCE AND METALLURGICAL PROPERTIES. SUBSTITUTION OF PARTS MAY ONLY BE DONE IS ACCEPTABLE TO OR APPROVE BY THE ADMINISTRATOR.

Deefina Martinez
Signature of Quality Assurance Representative

6-30-14
Date

FINAL (PROCESSING, LAB, MECHANICAL TESTING) INSPECTION REPORT


Lot Number: 47616	Part Number: RH30C5	Dwg. Number: NASM21043	Dwg. Rev#: 3	Lot Quantity: 84,745	Date: 6-2-14
Procurement Spec.: NASM25027		Proc. Spec. Rev#: 1	Note: All Specifications Referenced Refer To The Most Current Revision Unless Otherwise Stated		
SAMPLE SIZE	CHARACTERISTIC DESCRIPTION	INSPECTION MEDIA	ACCEPTANCE STAMP	PRODUCTION RELEASE DATE	
NUT	Material: BROWN PACIFIC Heat: D6490 Size: 415	Vendor Certification Alloy Verification		5/30/14	
CAP	Material: Heat: Size:	Vendor Certification Alloy Verification	N/A		
BASKET	Material: Heat: Size:	Vendor Certification Alloy Verification	N/A		
CLIP	Material: Heat: Size:	Vendor Certification Alloy Verification	N/A		
15	AMS2759/3 Stainless Steel Only Aged Load: 6-26-14	Tensile HRC Hardness Tester		06-27-14	
	AMS-H-6875 Steel Only Austempering Load: _____	Tensile HRC Hardness Tester	N/A		
80	AMS2410 [X] AMS2411 []	Visual Adhesion And Thickness ASTM B568		06-30-14	
	AMS-QQ-P-416 Class 1 [] 2 [] 3 []	Visual Adhesion And Thickness ASTM B568	N/A		
	AMS2400	Visual Adhesion And Thickness ASTM B568	N/A		
	Embrittlement Relief	23 [] 48-50 [] Clip Hours Stress At Room Temp Per NASM1312, Test 14	N/A		
	Embrittlement Relief	96 [] Hours Stress At Service Temp Per NASM1312, Test 14 [] BPS-N-70 []	N/A		
	Gold Chromate Treatment Type II	Visual- Workmanship Salt Spray Test of AMS-QQ-P-416	N/A		
80	Stainless Steel Only Passivated Per AMS-QQ-P-35, AMS2700	Visual High Humidity Test Per NASM1312		06/28/14	
15	Magnetic Permeability <2.0 (Air 1.0) For A Field Strength = 200 Oersteds	Indicator Per ASTM A342 Method 3, Corrosion Resistant Steel Only		06/30/14	
80	Non-Destructive Testing Discontinuities Sample M 100% []	Magnetic Particle Per ASTM E1444 or Fluorescent Penetrant Per ASTM E1417		06/27/14	
32 PCS	Carbowax Per C-1315 Drawing Batch No: _____	Visual, Workmanship	N/A		
	Dry Film Lubricant Per AS5272 Type 1 Batch No: _____	Visual, Workmanship, Adhesion Per AS5272 Verify Periodic Salt Spray	N/A		
	Microstructure	BPS-N-70 [] NAS3350 []	N/A		
32	Threads Per MIL-S-8879, AS8879	Method B, System 22		5/20/14	



FINAL TORQUE AND HARDNESS TEST RESULTS

Lot Number: 47616	Part Number: RH30C5	Dwg. Number: NASM21043	Dwg. Rev#: 3	Lot Quantity: 84,745
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BPS-N-70 ATTRIBUTE PLAN			Other:		25027 ATTRIBUTE PLAN		
Lot Size	Sample Size	Accept	Sample Size	Accept	Lot Size	Sample Size	Accept
UNDER 9	2	0			Under 10M	5	0
9 THRU 15	3	0			10M THRU 50M	10	0
16 THRU 25	4	0			50M THRU 100M	15	0
26 THRU 90	5	0			OVER 100M	27	0
91 THRU 280	7	0					
281 THRU 3200	13	0					
OVER 3200	15	0					

TORQUE TEST														
Test Bolt: NAS9605				Test Bolt Lot #: 32178M				Date: 6-30-14				Stamp: 		
Max. In.Lbs.: (1 ST ON) 60.0		Min. In.Lbs.: (1 ST BRK) 6.5		Seated Load:				NOTE: Record all cycles exhibiting values exceeding or not meeting maximum or minimum requirements as described in QOP 10.703, paragraph 8.7 and 9.11.						
CY	ON	BRK	ON	BRK	ON	BRK	ON	BRK	ON	BRK	ON	BRK	ON	BRK
1	25.0	24.0	25.0	27.0	30.0	28.0	18.0	20.0	18.0	20.0				
7	20.0	20.0	23.0	26.0	26.0	36.0	15.0	15.0	18.0	18.0				
15	20.0	20.0	22.0	20.0	24.0	35.0	14.0	15.0	14.0	19.0				
1	30.0	35.0	25.0	25.0	30.0	30.0	25.0	25.0	30.0	25.0				
7	24.0	30.0	22.0	23.0	25.0	25.0	20.0	20.0	20.0	22.0				
15	23.0	33.0	19.0	20.0	25.0	26.0	17.0	20.0	22.0	25.0				
1	26.0	20.0	35.0	35.0	23.0	25.0	30.0	30.0	30.0	30.0				
7	20.0	25.0	30.0	30.0	25.0	29.0	25.0	25.0	25.0	23.0				
15	20.0	26.0	23.0	25.0	30.0	30.0	33.0	33.0	23.0	28.0				
1														
7														
15														

HARDNESS TEST															
CONVERTED FROM 30N SCALE TO HRC per ASTM E140				HRC Requirement: Min.: _____ Max.: *				Date: 6-27-14				Stamp: 			
HRC	41	40	41	41	40	46	39	41	42	41	42	41	39	42	41
30N	60.1	59.4	60.5	60.1	59.8	59.1	59.0	60.2	61.0	60.5	61.1	60.8	58.8	61.0	60.5
15N*															

* CLIPS AND NUTS ONLY



BROWN-PACIFIC, INCORPORATED
13639 BORA DR. / SANTA FE SPRINGS / CALIFORNIA 90670
(562) 921-3471 • (562) 921-7012 FAX

MATERIAL TEST REPORT

F.O.B.		SHIP VIA		JOB NO.		INVOICE NO.	
SES		BP TRUCK				-0- 76920A	
SHIP TO	ALCOA FASTENING - REPUBLIC 1300 RANCHO CONEJO BLVD NEWBURY PARK, CA 9132C			ORDER DATE		THIS MATERIAL WAS MANUFACTURED AND TESTED IN CONFORMANCE WITH THE NOTED SPECIFICATIONS. THE INFORMATION PRESENTED HEREIN IS CORRECT AS CONTAINED IN THE COMPANY RECORDS. FACILITY IS MERCURY & RADIOACTIVE FREE. BY: <i>G. Moreno</i> G. MORENO, LAB	
				11/22/11			
				CUST. P.O. NO.			
SOLD TO	ALCOA FASTENING SYSTEMS PO BOX 1186 PITTSBURGH, PA 1523C			DUE DATE		2/15/2012 GM	
				220557913-1			
				01/27/12			
PRODUCT ORDERED				QTY. ORDERED			
0.795 DIA TYPE A-286 CONVERTED TO 0.4135/0.4165 SEAMSAFE MIRAFLEX COATED COIL				2600		KNOWINGLY OR WILLFULLY RECORDING FALSE, FICTITIOUS, OR FRAUDULENT, STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL LAW, TITLE 18, CHAPTER 47.	

SPECIFICATIONS

CAP OF AMS 5731L 5732J 5734K 5737P

GRADE	MILL NO.	HEAT NO.
A-286	12	D6490

CHEMICAL ANALYSIS

C: .032 ✓ AL: .20 ✓
 MN: .16 ✓ TI: 2.15 ✓
 P: .011 ✓ B: .0078 ✓
 S: <.001 ✓ CB:
 SI: .13 ✓ TA:
 NI: 24.78 ✓ CB+TA:
 CR: 14.14 ✓ CU: .06 ✓
 MO: 1.21 ✓ SE:
 CO: .04 ✓ N:
 V: .25 ✓ FE: BAL.
 CA: PB: <.0001
 MG: BI: <.00001
 ZR<.001

ASTM GRAIN SIZE: 6/7

MACRO:

MICRO:

OTHER: DFAR 252.225-7014 Compliant

RFM
1
AV

RFM
105

12-040

MECHANICAL PROPERTIES AND CAPABILITY

AS SHIPPED PROPERTIES	TENSILE, KSI	100.1	YIELD, KSI		% ELON	-		
	% RA		HARDNESS		SHEAR, KSI			
ETT °F	TENSILE, KSI		YIELD, KSI		% ELON	% R.A.		
STRESS RUPTURE	TEMP °F	1200F	STRESS, KSI	65	HOURS	136.0	% ELON	42.9
	TEMP °F	1200F	STRESS, KSI	70	HOURS	67.0	% ELON	35.7
H.T. PROCEDURE								
1650F 2HRS W/Q, 1325F 16HRS A/C								
	TENSILE, KSI	160.0	YIELD, KSI	103.0	% ELON	27.0		
	% R.A.	49.0	HARDNESS	RC 32	SHEAR, KSI			
H.T. PROCEDURE								
1800F 1HR W/Q, 1325F 16HRS A/C								
	TENSILE, KSI	160.0	YIELD, KSI	108.0	% ELON	28.0		
	% R.A.	48.0	HARDNESS	RC 33	SHEAR, KSI			
H.T. PROCEDURE								
	TENSILE, KSI		YIELD, KSI		% ELON			
	% R.A.		HARDNESS		SHEAR, KSI			